

BANGALORE UNIVERSITY
DEPARTMENT OF COMMUNICATION

A MEETING OF THE BOS IN COMMUNICATION WAS CONVENED ON SATURDAY
13-12-2003 AT 11.30 AM IN THE CHAMBERS OF THE CHAIRMAN, DEPARTMENT OF
COMMUNICATION, BANGALORE UNIVERSITY, BANGALORE.

THE FOLLOWING MEMBERS WERE PRESENT:

1. **Dr. K. PUTTARAJU.....CHAIRMAN**
2. **Prof. N.S. ASHOK KUMAR..... MEMEBR**
3. **Dr. B.K. RAVIMEMEBR**
4. **Smt. M N VANIMEMEBR**

5. **Sri. MASILAMANI.....Absent**
6. **Dr. C PICHANDY-do-**
7. **Dr. USHARANI N.....-do-**

1. The Board unanimously ratified the resolution co-opting smt. M. N. Vani, Head of the Dept., Dept., of Journalism, NMKRV College for women, Bangalore as a special invitee and member of the BOS representing the undergraduate faculty.

2. The BOS unanimously resolved to approve the syllabi for B A Optional subject of Journalism under semester scheme prepared by the Chairman in consultation with the undergraduate and post graduate teachers through a series of consultation, discussion and workshops.

-sd-
CHAIRMAN

BANGALORE UNIVERSITY
SYLLABI FOR B.A. DEGREE (SEMESTER SCHEME)

OPTIONAL SUBJECT: JOURNALISM

PAPER: 1.1

TITLE OF THE PAPER: INTRODUCTION TO MASS COMMUNICATION

MAX MARKS 100 (Theory 90 + Internal Assessment 10) HOURS PER WEEK -5

UNIT I

Communication - Definition, Nature, Scope, Purpose, Process of Communication, Functions of Communication, Uses of Communication.

UNIT II

Kinds of Communication: Intra-personal, Interpersonal, Group, Mass Communication and other types.

UNIT III

Basic models of Communication - Linear, Non-linear models. Glossary of Journalism and Communication.

UNIT IV

Media for Mass Communication: Print media, Electronic media- Radio, Television, Oral, Traditional and Folk media.

BOOKS FOR REFERENCE:

- | | |
|-------------------|--------------------------------------|
| 1. DAVID BERLO | The Process of Communication. |
| 2. EMERY & OTHERS | Introduction to Mass Communication. |
| 3. WILBUR SCHRAM | Mass Communication |
| 4. KEVAL J KUMAR | Mass Communication in India. |
| 5. RIVERS W L | Mass Media. |
| 6. FEDLER F | Introduction to Mass Media. |
| 7. BITNER J | Mass Communication- An introduction. |
| 8. SUBIR GHOSH | Communication in India. |

II SEMESTER

PAPER 2.2

TITLE OF THE PAPER: FUNDAMENTALS OF JOURNALISM

MAX MARKS 100 (Theory 90 + Internal Assessment 10) HOURS PER WEEK -5

UNIT I

Definition of Journalism: Nature, Scope, Functions. Role of Press in Democracy, Principles of Journalism.

UNIT II

Kinds of Journalism- Newspapers, Periodicals and Specialized Magazines. New Journalism, Development Journalism, Community Journalism.

UNIT III

Press in India: A brief review of the evolution of Indian Press- with special reference to J.A.Hickey, Raja Ram Mohan Roy, James Silk, Buckingham, M.K.Gandhi, S.Sadanand, and B.G.Horniman.

UNIT IV

Kannada Journalism: Origin, growth and development of Journalism in Karnataka. Major Newspapers of Karnataka. Recent Trends.

UNIT V

Review of Newspaper and Periodical Contents. Photo-Journalism. Uses of Cartoons, Comic strips. News Agencies. Professional Press Organizations.

BOOKS FOR REFERENCE:

- | | |
|-----------------------|---|
| 1. RIVERS W.L | Mass Media. |
| 2. FRASER BOND | Introduction to Journalism. |
| 3. MEHTA. D.S | Mass Communication and Journalism in India. |
| 4. NADIG KRSHNAMURTHY | Indian Journalism. |
| 5. PARTHA SARATHY R | Journalism in India. |
| 6. CHALPATHY RAU M | The Press. |
| 7. AHUJA B.N | The Theory and Practice of Journalism. |
| 8. GUNDAPPA D V | Vritta Patrikegalu. |

SEMESTER-III

PAPER-3.3

TITLE OF THE PAPER: MEDIA LAWS AND INDIAN CONSTITUTION.

MAX MARKS 100 (Theory 90+ Internal Assessment 10) HOURS PER WEEK -5

UNIT I

Concept of Freedom of Press. Press as a Fourth Estate. Press during Emergency. Public and Private media. Comparative freedom for media in- USA, India and Non aligned countries.

UNIT II

Indian Constitution: Preamble, Salient features, Fundamental Rights and Duties. Directive Principles of State Policy. Freedom of Speech and Expression: Article 19(1) (a) and Article 19(2).

UNIT III

Media Laws: Defamation-Slander, Libel, Sedition, Obscenity, Censorship and Contempt of Court.

UNIT IV

Media Acts: Official Secrets Act, Working Journalists Act of 1955, Parliamentary Proceedings and Privileges, The Press and Registration of Books.

UNIT V

Press Council of India, Press Commissions of India.

BOOKS FOR REFERENCES:

1.DURGADAS BASU

2.RAYUDU C S

3.UMRIGAR D M

4.PII

5.DURGADAS BASU

6.SOMESWARA RAO B

7.RADHAKSRISHNAMURTHY B

8.REPORTS

Laws of the Press in India

Communication Laws.

Journalist and the Law.

The Law and the Press.

Indian Constitution.

Journalism: Ethics, Codes and The law.

Indian Press Laws.

1) First Press Commission Report.

2) Second Press Commission Report.

3) Press Council Act

SEMESTER IV

PAPER 4.4

TITLE OF THE PAPER: BASIC AUDIO-VISUAL MEDIA.

MAX MARKS 100 (Theory 90+Internal Assessment 10) HOURS PER WEEK -5

UNIT I

Brief history of Radio, Evolution of Radio in India. Contemporary Radio-AM, FM, Community Radio, Educational Radio, Radio Rural Forum. Commercial Radio Broadcasting in India.

UNIT II

Impact of Radio on Society: Developed countries and Developing countries. Types of programs on Radio- Yuva vani, News, Farmers, Women, Labour, Special Audience. Principles of Writing for Radio.

UNIT III

A brief history of Television. Development of Television in India. Advent of Private Channels, Cable and Satellite TV, Television as an Educational medium.

UNIT IV

Types of Television Programmes. Basic Production Techniques. Writing for Television. Recent Trends in Indian Broadcasting Journalism.

UNIT V

A brief history of Indian Cinema. New trends in Indian cinema. Status of Kannada Cinema. Censorship in India.

BOOKS FOR REFERENCE:

- | | |
|--------------------------|---|
| 1. MEHRA MASANI | Broadcasting and the People. |
| 2. SRIVASTAVA K M | Radio and TV Journalism. |
| 3. BLISS AND PATTERSON | Writing News for Broadcasts. |
| 4. KAUSHIK S | Introduction to TV Journalism. |
| 5. GERALD MILLER SON | Techniques of Television Production. |
| 6. MULLICK K R | Tangled Tapes. |
| 7. BARNOU & KRISHNASWAMY | Indian Film |
| 8. GARGA B D | So many Cinemas: The Motion Picture in India. |

SEMESTER V

PAPER-5.5

TITLE OF THE PAPER: REPORTING METHODS

MAX MARKS 100 (Theory 90+ Internal Assessment 10) HOURS PER WEEK -4

UNIT I

News: Definitions, News Values, Structure. Methods of writing a news story. Leads: types of leads. Sources of News. Principles of news writing. Traits of a Reporter.

UNIT II

Interview-Techniques, Types. Methods of writing Interview Stories.

UNIT III

Features: Definition, Kinds of features, Writing different kinds of features. News writing skills for covering – Conference, Seminar, Press Conference, Press releases. Advance stories and Complex stories.

UNIT IV

Reporting: Speech, Crime, Sports, Courts, Society, Accidents, Science, Agriculture, Fashion and Development.

BOOKS FOR REFERENCE:

- | | |
|---------------------|-----------------------------|
| 1. KAMATH M V | Hand Book of Journalism. |
| 2. SRIVASTAVA K M | News writing and Reporting. |
| 3. Mc DOUGAL C D | Interpretative Reporting. |
| 4. SHEEHAN P V | Reportorial writing. |
| 5. SHERWOOD H C | Journalistic writing. |
| 6. KAMATH M V | Professional Journalism. |
| 7. CARL WARREN | Modern news reporting. |
| 8. RAMACHANDRA IYER | Quest for news. |

SEMESTER V

PAPER-5.6

TITLE OF THE PAPER: EDITING TECHNIQUES

MAX MARKS 100 (Theory 90+ Internal Assessment 10) HOURS PER WEEK -4

UNIT I

Newspaper Organization- Operations. Functions and Duties of the Editorial Departments.

UNIT II

Need and Purpose of Editing. Principles of Editing: Print and Electronic media.

UNIT III

Duties and Responsibilities of Editor. News Editor. Chief Sub Editor. Sub Editor.
Headlines: Kinds of Headlines, Functions of Headlines, Headline writing and Unit Count.

UNIT IV

Introduction to Typography. Graphic Arts- Importance and Methods.

BOOKS FOR REFERENCE:

- | | |
|------------------------|------------------------------------|
| 1. BRUCE WESTLEY | News Editing |
| 2. BASKETT & SCISSORS | The Art of Editing. |
| 3. HAROLD EVANS | Newspaper Design. |
| 4. WOLSELEY & CAMPBELL | Newsmen At Work. |
| 5. GEORGE T J S | Editing-A Handbook for Journalism. |
| 6. HUNT A | Newspaper Design. |
| 7. SPENCER L M | Editorial Writing. |
| 8. McGRIFFERT R C | The Art of Editing News. |

SEMESTER VI

PAPER-6.7

TITLE OF THE PAPER: MEDIA MANAGEMENT

MAX MARKS 100 (Theory 90+ Internal Assessment 10) HOURS PER WEEK -4

UNIT I

Starting of a Newspaper: Newspaper Organization and Management. Principles of Newspaper Business, Divisions, Operations. Types of Newspaper Organizations in India.

UNIT II

Newspaper Ownership: Types of Newspaper ownership in India. Circulation and Promotion. Public Relations for Newspaper Organization.

UNIT III

Problems and Prospects of Newspaper Industry in India, Small newspaper and their problems. News Agencies. Global competition on Indian Media. Status of Radio and Television in India.

UNIT IV

Principles of Television and Radio Management in India. Recent Trends in Broadcasting Management.

BOOKS FOR REFERENCE:

1. MEHRA Newspaper Management.
2. RUCKER & WILLIAMS Newspaper Organization and Management.
3. SINDHWANI Newspaper Economics and Management.
4. HERBERT WILLIAMS Newspaper Organization and Management
5. RAYUDU C S Media and Communication Management.
6. MOCVATT & PRINGLE Electronic media Management
7. BHATTACHARJEA A Indian Press- Profession to Industry.
8. BARNHART T F Weekly Newspaper Management.

SEMESTER VI

PAPER-6.8

TITLE OF THE PAPER: INTRODUCTION TO ADVERTISING AND PUBLIC RELATIONS.

MAX MARRKS 100 (Theory 90+ Internal Assessment 10) HOURS PER WEEK -4

UNIT I

Advertising- Meaning, Nature, Scope. Types of Advertisements. Role of Advertising in Society. Advertisements and Ethics.

UNIT II

Advertising Agencies. Functions of Advertising Agencies. Copy writing, Slogan writing, Visualisation.

UNIT III

Nature and Scope of Public Relations. Qualifications and responsibilities of a Public Relations Officer. Difference between Publicity, Public Opinion, Propaganda and Public Relations.

UNIT IV

House Journals, Corporate Communication. Professional Organizations in Public Relations.

BOOKS FOR REFERENCE:

- | | |
|-----------------------|---------------------------------------|
| 1. KEVAL J KUMAR | Advertising in India. |
| 2. SANDAGE AND OTHERS | Advertising –Theory and Practice. |
| 3. SETHIA & CHUNAWALA | Advertising- Principles and Practice. |
| 4. OTTO KLEPPNER | Advertising Procedure. |
| 5. CUTLIP & CENTER | Effective Public Relations. |
| 6. RAVINDRAN | Handbook of Public Relations. |
| 7. AHUJA & CHANDRA | Public Relations. |
| 8. SAM BLACK | Practical Public Relations. |



BANGALORE UNIVERSITY

Jnana Bharathi Campus, Bangalore – 560 056

FACULTY OF ARTS

**DEPARTMENT OF POLITICAL SCIENCE
SYLLABUS for**

BA SEMESTER SCHEME

For the Academic Year 2011-12



Dr. P.S.JAYARAMU
Professor & Chairperson

JNANA BHARATHI
BANGALORE - 56.

29th July 2010

**Proceedings of the Meeting of the Board of Studies in
Political Science (UG), 2010**

The meeting of the Board of Studies in Political Science (UG) was convened on **29th July 2010** at 11.00 A.M in the Conference Room of the Department of Political Science, Bangalore University, Jnana Bharathi, Bangalore. The following decisions/resolutions were taken/passed at the meeting:

1. Approved the Panel of Examiners for the B.A (Political Science), Semester and Annual Scheme examinations for the year 2010-11 and the Indian constitution Compulsory paper for the **2010-2011 examinations**.
2. Recommended names for the chairman and members of the Board of Examiners for the above mentioned examinations.
3. The members approved the revised syllabus for being introduced from the academic year 2011-12 and resolved to request the University authorities to do the needful.
4. The Board unanimously resolved that the Compulsory paper on Indian Constitution should also be brought under Central Valuation from the academic year 2010-11. The Compulsory paper on Indian Constitution should be valued by teachers of Political Science only.
5. The Board also resolved that the work load for teaching of each paper should be 5 hours per week for all the semesters.

The following Members were present at the Meeting:

Name

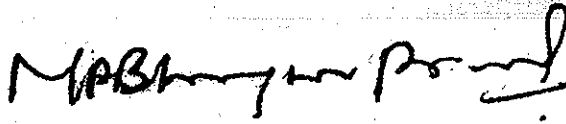
Signature

Chairman:

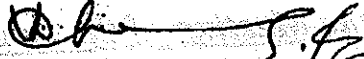
01. Dr.P.S.Jayaramu

Members:

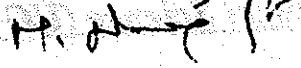
02. Dr. Bhuvaneshwara Prasad



03. Prof. Dhanamma.V



04. Sri.M. Narayanaswamy



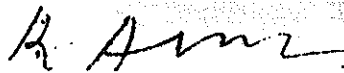
05. B.K.Dattatri



06. Prof. Sri.Ashwath G.R



07. Sri.Ashwath Reddy R

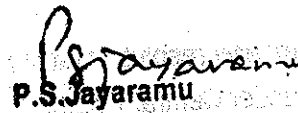


MEMBERS ABSENT :

08. Prof.Madanagiriappa

09. Prof.Neri Cornelio

10. Sri.Suresha



P.S. Jayaramu

INTRODUCTION TO THE B.A. POLITICAL SCIENCE COURSE

The B.A. Political Science Course offered by Bangalore University is spread over Six semesters. The objective of the course is to provide a firm grounding in the subject, develop 'analytical skills' and to provide a 'realistic' perspective to the local, national and international issues that figure in the syllabus.

The syllabus has been completely updated in keeping with the changing times and circumstances, as well as the larger societal needs. The course content includes papers in core areas of Political Science like Concepts of Political Science, Political Theories, Modern Governments, Political Thought – Western and Eastern, Public Administration, International Relations, International Institutions & Foreign Policies & Indian Constitution- Institutional Structure. The revised & updated bibliography paper wise has also been provided.

The goals and objectives of the B.A. Political Science Course are as follows:

- To impart quality education to those seeking admission to the B.A. Political Science Course.
- To equip the students to prepare themselves for careers in teaching and research, the Union and State civil services, and the non-governmental sector.
- To increase awareness among students on local, national and international issues, and strengthen their analytical skills and capabilities; and
- To train students to be good citizens.

SEMESTER SCHEME SYLLABUS
(To be effective from the Academic Year 2011-2012)

B.A. I SEMESTER

Sl No	Paper No	Title of Paper	Page No.
1	PAPER -1	CONCEPTS OF POLITICAL SCIENCE-----	1

B.A. II SEMESTER

2	PAPER-2	POLITICAL THEORIES-----	2
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B.A. III SEMESTER

3	PAPER-3	MODERN GOVERNMENTS (With reference to the Constitutions of UK, USA and Switzerland) -----	3
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B.A IV SEMESTER

4	PAPER 4	POLITICAL THOUGHT - WESTERN AND EASTERN	4
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B.A. V SEMESTER

5	PAPER 5.1	PUBLIC ADMINISTRATION -----	5
6	PAPER 5.2	INTERNATIONAL RELATIONS -----	6
7	OPTIONAL 5.1	INTERNATIONAL RELATIONS -----	7
8	OPTIONAL 5.2	INTERNATIONAL INSTITUTIONS & FOREIGN POLICIES -----	8

B.A.VI SEMESTER

9	PAPER 6.1	INDIAN CONSTITUTION- INSTITUTIONAL STRUCTURE	9
10	PAPER 6.2	INDIAN CONSTITUTION - PROCESSES AND ISSUES----	10

QUESTION PAPER PATTERN

[B.A. (Political Science) 'Semester Scheme' Syllabus]

Total Marks: 90

Time: 3 hours

NOTE : Read Instructions carefully. All Parts - A, B and C - are compulsory except for their internal options.

PART A

Instructions : Answer any three from the following in 60 words each.
All questions carry equal marks 5 x 3 = 15 marks

- 1)
- 2)
- 3)
- 4)
- 5)

PART B

Instructions : Answer any three questions from the following in 200 words each.
All questions carry equal marks 10 x 3 = 30 marks

- 1)
- 2)
- 3)
- 4)
- 5)

PART C

Instructions : Answer any three questions from the following in 500 words each.
All questions carry equal marks 15 x 3 = 45 marks

- 1)
- 2)
- 3)
- 4)
- 5)

SYLLABUS FOR SEMESTER SCHEME-B.A.POLITICAL SCIENCE

I SEMESTER

PAPER-1: CONCEPTS OF POLITICAL SCIENCE

- Political Science** : Meaning, Nature, Scope & Importance. Approaches to Political Science-Historical, Normative, Behaviouralism and Post-Behaviouralism
- State** : Elements of State, Theories of State, Historical, Divine, Social Contract Theory, State in the age of Globalisation, State and Civil Society
- Sovereignty** : Meaning Characteristics and Kinds; Theories of Sovereignty, Contemporary Challenges to State Sovereignty
- Law and Justice** : Law- Meaning, Schools of Law-Historical, Philosophical, Comparative, Social and Marxian, Law & Governance, Liberty & Equality- Meaning & Kinds. Justice-Definitions- Social, Economic, Political and Legal, Rawl's Concept of Justice
- Rights and Duties** : Meaning & Kinds- Civil, Political, Social, Economic & Cultural, Human Rights with special References to Rights of Children, Women, Minorities and Disadvantaged Sections, Duties towards the State

Books for Reference

Author	Title
1. A.C.Kapur	-Principles of Political Science-S.Chand & Co-1998 (Revised)
2. J.C.Johari	- Principles of Modern Political Science-Sterling-2007
3. Appadorai	- The substance of Politics OUP-1998(Reprint)
4. N.W.Agarwal	- Principles of Political Science-R.Chand & Co-2006.
5. Sahadipali	- Civil Society and Modern Politics-Global Vision-2004
6. Harold Laski	- Grammer of Politics-Surjeet-2005
7. B.K.Gokale	- Political Science-Theory & Government Machinery HPH-2008
8. Heywood	- Key Concepts of Politics-Ane-2009
9. John Rawls	- Concepts of Justice-Rawat Pub-1999
10. R.R.Sarana	- Behaviouralism and Political Theory-Rawat Pub-2001
11. A.AS.Joseph	- Capitalism, Socialism and Democracy-S.Chand & Co-1988
12. D.Deol	- Liberalism and Marxism-Sterling-1988
13. Krishna Iyer	- Human Rights and Wrongs
14. O'Byrne	- Human Rights- An Indtroduction-Pearson-2010
15. ಡಾ.ಎಂ.ಪಿ.ಭುವನೇಶ್ವರ ಪ್ರಸಾದ್	- ರಾಜ್ಯ ಶಾಸ್ತ್ರದ ಮೂಲಭೂತ ಪರಿಕಲ್ಪನೆಗಳು - ಕಲಾಪ್ರಕಾಶನ 2004
16. ಹಾಲಜ್ಜಿ	- ರಾಜ್ಯ ಶಾಸ್ತ್ರ - ಜೇತನ ಬುಕ್ ಹೌಸ್ - 2005
17. ಮಾಲ ಮದ್ದಣ್ಣ	- ರಾಜ್ಯ ಶಾಸ್ತ್ರ - ಕಲಾ ಪ್ರಕಾಶನ - 2004
18. ರಾಮಕೃಷ್ಣ	- ರಾಜ್ಯ ಶಾಸ್ತ್ರ - ಲಲಿತ ಪ್ರಕಾಶನ - 2005
19. ಲೋಹಿತಾಶ್ವ	- ರಾಜ್ಯ ಶಾಸ್ತ್ರದ ಪರಿಕಲ್ಪನೆಗಳು - ವಿದ್ಯಾನಿಧಿ - 2010
20. ಹಾಲಜ್ಜಿ	- ರಾಜ್ಯ ಶಾಸ್ತ್ರ - ವಿದ್ಯಾನಿಧಿ - 2008
21. ಕಬ್ಬೂರಿ	- ರಾಜ್ಯ ಶಾಸ್ತ್ರದ ಮೂಲ ಪರಿಕಲ್ಪನೆಗಳು - ವೀಣಾ ಪಬ್ಲಿಕೇಶನ್ಸ್ - 2004

II SEMESTER

PAPER-2: POLITICAL THEORIES

1. **Political Theory** : Meaning, Importance, Contemporary Trends: Liberalism: Classical, Modern and Neo-Liberalism
2. **Democracy** : Meaning and Kinds, Theories of Democracy-Classical, Pluralist, Marxist, Elitist, Challenges to Democracy
3. **Imperialism and Post Imperialism** : Meaning and Types, Neo-Colonialism and its Feature, Dependency Theory, Modernism and Post Modernism
4. **Socialism** : Meaning and Kinds of Socialism-Utopian Socialism, Democratic Socialism, Scientific Socialism, Market Socialism, Challenges to Socialism, Debate over end of Ideology
5. **Gandhism** : Principles, Means and Ends, Truth and Non-Violence, Satyagraha, Sarvodaya, Relevance of Gandhism in Modern Times

Books for Reference

Author	Title
1. Andrew Hacker	- Political Theory: Philosophy, Ideology Science- Surjeet-2006.
2. G.P.Gauba	- Introduction to Political Theory- Macmilan-2006.
3. Heywood	- Political Ideologies-Palgrave-2003
4. Asirvatham	- Modern Political Theory- S.Chand & Co (1968) 2001 (Revised)
5. S.P.Varma	- Modern Political Theory- Vikas-1990 (Revised)
6. Earnest Barker	- Principles of Social and Political Theory-OUP-1987.
7. Manoj Sharma	- Political Theory and Thought- Anmol Publication-2004
8. G.H.Subine	- A History of Political Theory-OIBH-1998
9. Choudhury	- Political Theory-Traditional & Modern Justice-National-1999
10. Bikhu Parekh	- Gandhism. OUP 2004
11. ಡಾ.ಎಂ.ಪಿ.ಭುವನೇಶ್ವರ ಪ್ರಸಾದ್	- ಪ್ರಮುಖ ರಾಜಕೀಯ ಸಿದ್ಧಾಂತಗಳು- ಕಲಾ ಪ್ರಕಾಶನ - 2004
12. ಡಾ.ಎಂ.ಪಿ.ಭುವನೇಶ್ವರ ಪ್ರಸಾದ್	- ಗಾಂಧೀ ವಿಚಾರಧಾರೆ - ಶಬರಿಮಲೆಯನ್ - 2005
13. ಕೆ.ಜೆ.ಸುರೇಶ್	- ಪ್ರಮುಖ ರಾಜಕೀಯ ಸಿದ್ಧಾಂತಗಳು - ಜೇತನ ಬುಕ್ ಹೌಸ್ - 2004
14. ಡಾ.ದೇವೇಗೌಡ	- ಪ್ರಮುಖ ರಾಜಕೀಯ ಸಿದ್ಧಾಂತಗಳು - ಜೇತನ ಬುಕ್ ಹೌಸ್ - 2004

III SEMESTER

PAPER 3 : MODERN GOVERNMENTS

(With reference to the Constitutions of UK, USA and Switzerland)

Salient Features

1. **Legislatures** : Composition, Powers and Functions, Law Making Process, Challenges to Legislatures in recent times
2. **Executive** : Types, Powers and Functions, Debate over the rising powers and role of the Executive
3. **Judicial System** : Composition, Powers and Jurisdiction, Supreme Court and Judicial Review
4. **Political Parties and Pressure Groups** : Nature & Functions
5. **Public Opinion** : Importance & Agencies of Public Opinion

Books for Reference

Author	Title
1. Bhattacharya	- Modern Political Constitutions- Vijaya-2003
2. K.K.Ghai	- Select Political System-Kalyani-2008
3. K.K.Ghai	- Major Governments- Kalyani-2008
4. A.C.Kapur	- Select Constitutions- S.Chand & Co-2006
5. J.C.Johari	- Major Modern Political Systems- Vishal-1987 (Revised)
6. S.Guptha	- Simple Study of World Constitutions- Ajantha-1997
7. B.C.Rai	- World constitutions- Prakasana Kendra -1998
8. S.R.Maheswari	-Comparative Government and Politics-Laxminarayana Agarwal 2004.
9. U.R.Ghai	- Political Systems of Switzerland- New Academic Pub-2003
10. Harihara Das	- Select Modern Governments- Anmol Pub-2000
11. Caramani Danic	- Comparative Politics- OUP-2008
12. V.K.Khanna	- Comparative Study of Government and Politics-R.Chand & Co-2007
13. Palekar	- Comparative Politics & Government-PHI-2010
14. R.N.Sharma	- Great Political Thinkers of the World
15. Suresh C Pant	- History of Western Political Thought: From Plato to Present Day Prakashan Kendra- 2009
16. ಡಾ.ಎಂ.ವಿ.ಭುವನೇಶ್ವರ ಪ್ರಸಾದ್	- ಅಧುನಿಕ ಸರ್ಕಾರಗಳು - ಕಲಾ ಪ್ರಕಾಶನ - 1999
17. ಡಾ.ಐ.ಡಿ.ದೇವೇಗೌಡ	- ಅಧುನಿಕ ಸರ್ಕಾರಗಳು - ಜೇತನ ಬುಕ್ ಹೌಸ್
18. ಕೆ.ಜಿ.ಸುರೇಶ್	- ಅಧುನಿಕ ಸರ್ಕಾರಗಳು - ಜೇತನ ಬುಕ್ ಹೌಸ್
19. ಹೆಚ್.ಐ.ರಾಮಕೃಷ್ಣ	- ಅಧುನಿಕ ಸರ್ಕಾರಗಳು - ಲಲಿತ ಬುಕ್ ಹೌಸ್
20. ಲೋಕತಾಸ್ತ	- ಅಧುನಿಕ ಸರ್ಕಾರಗಳು - ವಿದ್ಯಾನಿಧಿ ಪ್ರಕಾಶನ
21. ಮೂಲ: ಕೆ.ಸಿ.ವೀಯರ್ ಅನುವಾದ: ಮಹೇಶ್ವರಪ್ಪ	- ಅಧುನಿಕ ಸಂವಿಧಾನಗಳು - ಮೈಸೂರು ವಿವಿ - 1994.

IV SEMESTER

PAPER 4 : POLITICAL THOUGHT – WESTERN AND EASTERN

1. **Ancient Greek Political Thought** : Ideas of Socrates, Plato-Ideal State, Justice, Education, Communism and Philosopher King. Aristotle- Concepts of State, Classification of Constitutions, Slavery and Revolution
2. **Medieval Political Thought** : Church & State in Medieval Europe. St.Augustine and Thomas Aquinas
3. **Modern Political Thought** : Political Ideas of Machiavelli and J.S.Mill
4. **Political Ideas** of Karl Marx and Harold J.Laski
5. **Eastern Political Thought** : Political Ideas of Manu, Kautilya and Shanti Parva of Mahabharatha

Books for Reference

Author	Title
1. Ghosh Birendranath Pub	- Glimpses of Political Thought- Western & Indian, Mahila Mangal Kolkata-2004
2. D.R.Bandari	- Studies in Plato and Aristotle- S.Chand & Co-1990
3. Venkat Rao	- History of European Political Philosophy-S.Chand & Co.
4. Venkat Rao	- Ancient Political Thought- S.Chand & Co-1990.
5. M.G.Gupta	- History of Political Thought-Chaithanya Pub-2000 (Reprint)
6. R.P.Sharma	- Western Political Thought- Sterling-1998
7. Wayper C L	- Political Thought- B.I.Publication-1988
8. V.P.Varma Agarwal-	- Ancient, Medieval, Indian Political Thought- Lakshminarayana 1982
9. V.P.Varma	- Modern Indian Political Thought- Lakshminarayana Agarwal-1982.
10. Mukerjee	- History of Political Thought- Plato-Prentice hall-1999
11. Appadorai	- Political Thought in India- Khanna-2002.
12. Manoj Sharma	- Political Thought- Anmol-2004
13 Pergara	- Chanakya Neeti Darpana- Surjeet Publications-2009
14. ಡಾ.ಎಂ.ಪಿ.ಭುವನೇಶ್ವರ ಪ್ರಸಾದ್	- ಪ್ರಾಚೀನ ಭಾರತದ ರಾಜಕೀಯ ತತ್ವಿಕರು - ಶರಬರಿಮಲೆಯನ್ - 2008
15. ಡಾ.ಎಂ.ಪಿ.ಭುವನೇಶ್ವರ ಪ್ರಸಾದ್	- ಆಧುನಿಕ ರಾಜಕೀಯ ಚಿಂತಕರು - ಶರಬರಿಮಲೆಯನ್ - 2009
16. ಮಾಲ ಮುದ್ದಣ್ಣ	- ರಾಜನೀತಿಜ್ಞರು - ಕಲಾ ಪ್ರಕಾಶನ - 2005
17. ವಿ.ಜಿ.ಸಾಲಮಠ	- ರಾಜ್ಯ ಶಾಸ್ತ್ರ ವೈಭಾರಿಕರು - ವಿದ್ಯಾನಿಧಿ - 2008
18. ಎಚ್.ಸಿ.ಲೋಹಿತಾಶ್ವ	- ರಾಜಕೀಯ ಚಿಂತಕರು - ವಿದ್ಯಾನಿಧಿ - 2008
19. ನವಲಗುಂದ	- ಪಾಶ್ಚಿಮಾತ್ಯ ಮತ್ತು ಭಾರತೀಯ ರಾಜನೀತಿ ವಿವೇಚಕರು - ವಿದ್ಯಾನಿಧಿ - 2007
20. ಕಲ್ಕಠ ಮತ್ತು ಶೀಲವಂತರ	- ಭಾರತೀಯ ರಾಜನೀತಿ ವಿವೇಚಕರು - ವಿದ್ಯಾನಿಧಿ - 2008
21. ಟಿ.ಡಿ.ದೇವೇಗೌಡ	- ಪಾಶ್ಚಿಮಾತ್ಯ ರಾಜಕೀಯ ಚಿಂತನೆ - ಜೇತನ ಬುಕ್ ಹೌಸ್ - 2007
22. ಕೆ.ಜೆ.ಸುರೇಶ್	- ಪಾಶ್ಚಿಮಾತ್ಯ ರಾಜಕೀಯ ಚಿಂತಕರು - ಜೇತನ ಬುಕ್ ಹೌಸ್ - 2008

V SEMESTER

PAPER 5.1: PUBLIC ADMINISTRATION

1. **Public Administration** : Meaning, Scope, Importance of Public Administration, Private and Public Administration: Differences, Organisation: Theories and Principles, Line, Staff and Auxillary Agencies, Departments
2. **Dynamics of Management** : Meaning and Functions of Management; Chief Executive – Powers and Functions. Leadership- Qualities, Communication, Planning and Public Relations
3. **Personnel Administration** : Meaning and Importance, Recruitment, Training, Promotion, Morale, Discipline, Retirement
4. **Financial Administration** : Budget – Nature and Principles, Budgetary Process- Preparation, Enactment and Execution, Reforms in Financial Administration, Performance Budget, Zero Based Budget
5. **Trends in Public Administration** : Comparative Administration, Development Administration, Good Governance, E-Governance, Public Private Partnership

Books for Reference

Author	Title
1. Chakravarthy	- Reinventing Public Administration- Orient Longman-2007
2. C.P.Bhambri	- Public Administration-JPN-2002
3. L.D.White	- Public Administration- Surjeet Publications-2007
4. B.L.Fadia	- Administrative Theory- Sahitya Bhavan-2007
5. S.L.Goel	- Public Personnel Administration-Theory & Practice, Deep & Deep-2006
6. M.Bhattacharya	- New Horizons of Public Administration- Jawahar Pub-2006
7. S.R.Maheshwari	- Administrative Theory- Macmilan-2003.
8. Ramesh K. Arora	- Public Administration- Aalekh – 2004
9. K.K.Ghai	- Public Administration- Kalyani- 2008
10. S.C.Goel	- Advanced Public Administration- Deep & Deep – 2008
11. M.P.Sharma	- Public Administration- Theory and Practice- Kittab Mahal – 2009
12. Henry Nicolas	- Public Administration and Public Affairs- PHI – 2009
13. Rumki Basu	- Public Administration- Sterling Pub- 2008
14. Avasthe&Maheshwari	- Public Administration – Lakshminarayana Agarwal.
15. ಡಾ.ಎಂ.ವಿ.ಭುವನೇಶ್ವರ ಪ್ರಸಾದ್	- ಸಾರ್ವಜನಿಕ ಆಡಳಿತದ ಮೂಲ ತತ್ವಗಳು - ಶಬರಿಮಲೆಯನ್ - 2006
16. ಎಚ್.ಉ.ರಾಮಕೃಷ್ಣ	- ಸಾರ್ವಜನಿಕ ಆಡಳಿತ - ಲಲಿತ ಪ್ರಕಾಶನ - 2002
17. ಮಾಲ ಮಧುಣ್ಣ	- ಸಾರ್ವಜನಿಕ ಆಡಳಿತ - ಪದ್ಮ ಪ್ರಕಾಶನ - 2002
18. ಎಚ್.ಕೃಷ್ಣರಾವ್	- ಸಾರ್ವಜನಿಕ ಆಡಳಿತ - ಮೈಸೂರು ವಿವಿ - 1962
19. ನವಲಗುಂದ	- ಸಾರ್ವಜನಿಕ ಆಡಳಿತ - ವಿದ್ಯಾನಿಧಿ ಪ್ರಕಾಶನ - 2007
20. ಶೀಲವಂತರ	- ಸಾರ್ವಜನಿಕ ಆಡಳಿತ - ವಿದ್ಯಾನಿಧಿ ಪ್ರಕಾಶನ - 2007
21. ಕೆ.ಜಿ.ಸುರೇಶ್	- ಸಾರ್ವಜನಿಕ ಆಡಳಿತ - ಜೇತನ ಬುಕ್ ಹೌಸ್ - 2007
22. ದಿನೇಶ	- ಅಭಿವೃದ್ಧಿ ಆಡಳಿತ - ಜೇತನ ಬುಕ್ ಹೌಸ್ - 2007
23. ಕಬ್ಬೂರಿ	- ಸಾರ್ವಜನಿಕ ಆಡಳಿತ - ವೀಣಾ ಪಬ್ಲಿಕೇಶನ್ಸ್ - 2006

V SEMESTER

PAPER 5.2: INTERNATIONAL RELATIONS.

1. **International Relations** : Nature and Importance, Idealist and Realist approaches, Systems and Decision making Theories
2. **National Power and Foreign Policy** : Elements of National Power, Evaluation of National Power, Formulation and Implementation of Foreign Policy, Role of Diplomacy and Economic Instruments
3. **War and Terrorism** : Meaning, Causes and Types of war, Methods of Prevention of war, Terrorism and Methods of combating Terrorism.
4. **International Law** : Nature, Sources and Sanctions, Universal Declaration of Human Rights, Role of Non-Governmental Organisations in the promotion of Human Rights
5. **International Organisations** : League of Nations, Evaluation, United Nations- Working and Challenges

Books for Reference

Author	Title
1. Melkote Rama S & A.Narasimha Rao	- International Relations- Sterling Pub- 1983
2. K.K.Ghai	- International Relations- Kalyani Pub - 2005
3. John Bayli's	- Globalisation of the world Politics- OUP-2008
4. V.K.Khanna	- International Relations- R.Chand & Co- 2009
5. Moore	- New United Nations: Institutional Organisation in the 21 st Century- Pearson-2010
6. Mahendra Gaur	- United Nations for a Better world - Alfa - 2006
7. Peu Ghosh	- International relations - PHI- 2009
8. Morgenthau Hans J	- Politics among Nations: The Struggle for Power & Peace-Kalyani Pub- 1985
9. Goldstein	- International Relations - Pearson - 2006(Reprint)
10. Malhotra V.K	- International Relations - Anmol Pub - 2006(Reprint)
11. Mahendra Kumar	- Theoretical Aspects of International Relations -Shivalal Agarwal & Co- Agra -1995(Reprint)
12. V.P.Dutt	- India's Foreign Policy Since Indipendance - NBT - 1987
13. Quincy Wright	- The Study of International Relations - Appleton Century Crafts New York-1955
14. ಡಾ.ಪಿ.ಎಸ್.ಜಯರಾಮು	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು - ಕಣ್ಣ ಪ್ರಕಾಶನ - 2008
15. ಡಾ.ಎಂ.ಪಿ.ಭುವನೇಶ್ವರ ಪ್ರಸಾದ್	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳ ಪರಿಕಲ್ಪನೆಗಳು - ಶಬರಿಮಠಿಯನ್ - 2006
16. ಲೋಹಿತಾಶ್ವ	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು ಮತ್ತು ಸಂಘಟನೆಗಳು-ವಿದ್ಯಾನಿಧಿ ಪ್ರಕಾಶನ-2010
17. ಆರ್.ವಿ.ಹೊರಡಿ	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು ಮತ್ತು ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಘಟನೆಗಳು-ವಿದ್ಯಾನಿಧಿ -2010
18. ಕೆ.ಜೆ.ಸುರೇಶ	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು - ಜೇತನ ಬುಕ್ ಹೌಸ್ - 2007
19. ಹೆಚ್.ಟಿ.ರಾಮಕೃಷ್ಣ	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಸ್ಥೆಗಳು - ಲಲಿತ ಪ್ರಕಾಶನ - 2006
20. ಮಾಲ ಮಧ್ವಣ್ಣ	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು - ಕಲಾ ಪ್ರಕಾಶನ - 2002
21. ಹಾಲಪ್ಪ	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು - ವಿದ್ಯಾನಿಧಿ ಪ್ರಕಾಶನ - 200

V SEMESTER

OPTIONAL 5.1: INTERNATIONAL RELATIONS

1. **International Relations** : Nature and Importance, Role of State and Non-State Actors, Idealist and Realist Approaches, Systems and Decision making Theories
2. **National Power and Foreign Policy** : Elements of National Power, National Security, Nature, Objectives and Formulation of Foreign Policy
3. **Instruments of Foreign Policy** : Diplomacy, Nature, Types and Functions, Alliances during Cold War and Post Cold war Period, Economic Instruments of Foreign Policy
4. **War and Terrorism** : Meaning, Causes, Types and Methods of Prevention of War, Terrorism; Combating Terrorism
5. **Approaches to International Peace** : Balance of Power, Collective Security, Pacific Settlement of International Disputes, Disarmament and Arms Control- Problems and Issues

Books for Reference

Author	Title
1. Melkote Rama S & A.Narasimha Rao	- International Relations- Sterling Pub- 1983
2. K.K.Ghai	- International Relations- Kalyani Pub – 2005
3. John Baylis	- Globalisation of the world Politics- OUP-2008
4. V.K.Khanna	- International Relations- R.Chand & Co- 2009
5. Moore	- New United Nations: Institutional Organisation in the 21 st Century Pearson-2010
6. Mahendra Gaur	- United Nations for a Better world – Alfa – 2006
7. Peu Ghosh	- International relations – PHI- 2009
8. Morgenthau Hans J	- Politics Among Nations: The Struggle for Power & Peace- Kalyani Pub- 1985
9. Goldstein	- International Relations – Pearson – 2006
10. Malhotra V K	- International Relations -Anmol Pub -2006
11. Mahendra Kumar	- Theoretical Aspects of International Relations-Shivalal Agarwal & Co- Agra-1995(Reprint)
12. Quincy Wright	- The Study of International Relations-Appleton Century Crafts New York 1955
13. ಡಾ.ವಿ.ಎಸ್.ಜಯರಾಮು	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು - ಕಣ್ಣ ಪ್ರಕಾಶನ - 2008
14. ಡಾ.ಎಂ.ವಿ.ಭುವನೇಶ್ವರ ಪ್ರಸಾದ್	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳ ಪರಿಕಲ್ಪನೆಗಳು - ಶಬರಿಮಠಿಯನ್ - 2006
15. ಲೋಹಿತಾಶ್ವ	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು ಮತ್ತು ಸಂಘಟನೆಗಳು - ವಿದ್ಯಾನಿಧಿ ಪ್ರಕಾಶನ - 2010
16. ಕೆ.ಜೆ.ಸುರೇಶ	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು - ಚೇತನ ಬುಕ್ ಹೌಸ್, - 2007
17. ಮಾಲ ಮಧ್ವಣ್ಣ	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು - ಕಲಾ ಪ್ರಕಾಶನ - 2002
18. ಹಾಲಪ್ಪ	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು - ವಿದ್ಯಾನಿಧಿ ಪ್ರಕಾಶನ - 2008

V SEMESTER

OPTIONAL 5.2 : INTERNATIONAL INSTITUTIONS & FOREIGN POLICIES

1. **International Relations** : Meaning, Nature, Importance, Sources & Sanctions, Universal Declaration of Human Rights & Related Covenants, Working of the International Court of Justice
2. **International Organisations** : League of Nations-Evaluation; United Nations, Purposes, Achievements, Shortcomings, UN & Environmental and Developmental Issues, Reforms and Restructuring of the United Nations
3. **Major Issues** : New International Economic Order, North-South and South-South Dialogues, Working of W.T.O., European Union, ASEAN & SAARC
4. **Foreign Policies of Major Powers** : United States, Russia and China
5. **Foreign Policy of India** : Origin & Objectives, India and South Asia, South East & West Asia; India and United Nations and India and the Non-Aligned Movement

Books for Reference

Author	Title
1. Melkote Rama S & A.Narasimha Rao	- International Relations- Sterling Pub- 1983
2. K.K.Ghai	- International Relations- Kalyani Pub - 2005
3. John Baylis	- Globalisation of World Politics- OUP-2008
4. V.K.Khanna	- International Relations- R.Chand & Co- 2009
5. Moore	- New United Nations: Institutional Organisation in the 21 st Century - Pearson- 2010
6. Mahendra Gaur	- United Nations for a Better world - Alfa - 2006
7. Peu Ghosh	- International Relations - PHI - 2009
8. Morgenthau Hans J	- Politics among Nations: The Struggle for Power & Peace-Kalyani Pub- 1985
9. Goldstein	- International Relations - Pearson -2006(Reprint)
10. Malhotra V K	- International Relations - Anmol Pub-2006(Reprint)
11. Mahendra Kumar	- Theoretical Aspects of International Relations-Shivalal Agarwal &Co Agra-2006 (Reprint)
12. V.P.Dutt	- India's Foreign Policy Since Independence -NBT -1999
13. Quincy Wright	- The Study of International Relations-Appleton Century Crafts New York-1955
14. Rajiv Sikri	- Rethinking Indian Foreign Policy, Sage- 2009
15. ಡಾ.ಪಿ.ಎಸ್.ಜಯರಾಮು	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು - ಕಣ್ಣು ಪ್ರಕಾಶನ - 2008
16. ಡಾ.ಎಂ.ಪಿ.ಭುವನೇಶ್ವರ ಪ್ರಸಾದ್	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳ ಪರಿಕಲ್ಪನೆಗಳು - ಶಬರಿಮಲೆಯನ್ - 2006
17. ಲೋಕತಾಜ್	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು ಮತ್ತು ಸಂಘಟನೆಗಳು - ವಿದ್ಯಾನಿಧಿ ಪ್ರಕಾಶನ - 2010
18. ಆರ್.ವಿ.ಹೊರಡಿ	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು ಮತ್ತು ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಘಟನೆಗಳು-ವಿದ್ಯಾನಿಧಿ- 2010
19. ಕೆ.ಜೆ.ಸುರೇಶ	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು - ಚೇತನ ಬುಕ್ ಹೌಸ್ - 2007
20. ಮಾಲ ಮಧುಣ್ಣ	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು - ಕಲಾ ಪ್ರಕಾಶನ - 2002
21. ಹಾಲಜ್ಜ	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು - ವಿದ್ಯಾನಿಧಿ ಪ್ರಕಾಶನ - 2008

VI SEMESTER

PAPER 6.1: INDIAN CONSTITUTION- INSTITUTIONAL STRUCTURE

1. **Major Constitutional Developments** : 1909, 1935, 1947 Acts, Framing of the Constitution. Constituent Assembly at work, Preamble & Salient Features
2. **Key Components** : Citizenship, Fundamental Rights, Directive Principles of State Policy, Fundamental Duties
3. **Union and State Legislatures** : Composition, Powers & Functions, Presiding Officers, Law making Process, Committees of Parliament, Decline of Legislatures, Reforms of Legislatures
4. **Union and State Executive** : President and Vice President-Elections, Powers and Functions, Prime Minister and Council of Ministers- Powers and Functions, Governor and Chief Minister- Council of Ministers- Powers and Functions. Debate over Parliamentary and Presidential Forms of Government
5. **Judiciary** : Supreme Court and High Courts, Composition, Jurisdiction, Right to Information Act, Judicial Activism, Judicial Reforms

Books for Reference

Author	Title
1. R.C.Agarwal	- Indian Government and Politics- S.Chand & Co-2007
2. V.D.Mahajan	- Constitution of India – S.Chand & Co – 2006.
3. Morris Jones	- Government and Politics of India – Author Press 1988
4. D.D.Basu	- Introduction to the Constitution of India – Wadhwa-2010(Reprint)
5. Srivatsava	- Indian Government and Politics
6. Subhas Kashyap	- Our Parliament – NBT – 1988
7. V.N.Shukla	- Constitution of India – Eastern Books - 1997
8. M.V.Pylee	- An Introduction to the Constitution of India-VIK-2007(Reprint)
9. R.B.Guttal	- The Constitution of India – Ajantha – 1990
10. Subhas Kashyap	- Constitutional Reforms, Problems, Prospects, Radha Pub- 2004
11. K.K.Ghai	- Indian Government and Politics- Kalyani Publishers-2005
12. ಡಾ.ಎಂ.ಪಿ.ಭುವನೇಶ್ವರ ಪ್ರಸಾದ್	- ಭಾರತದ ಸಂವಿಧಾನ – ಕಲಾ ಪ್ರಕಾಶನ – 1998
13. ಡಾ.ಎಂ.ಪಿ.ಭುವನೇಶ್ವರ ಪ್ರಸಾದ್	- ಭಾರತ ಸಂವಿಧಾನದ ಪರಿಚಯ – ಶಬರಿಮಲೆಯನ್ – 2005
14. ಡಾ.ಎಂ.ಪಿ.ಭುವನೇಶ್ವರ ಪ್ರಸಾದ್	- ಮಾಹಿತಿ ಹಕ್ಕು – ಶಬರಿಮಲೆಯನ್ – 2007
15. ಮಂಗಳ ಮೂರ್ತಿ	- ಭಾರತ ಸಂವಿಧಾನ. ಮಾನವ ಹಕ್ಕುಗಳು ಮತ್ತು ಪರಿನರ – ಚೇತನ ಬುಕ್ ಹೌಸ್ – 2007
16. ಹೆಚ್.ಉ.ರಾಮಕೃಷ್ಣ	- ಭಾರತ ಸಂವಿಧಾನ – ಲಲಿತ ಪ್ರಕಾಶನ – 2006
17. ಶೀಲವಂತರ	- ಭಾರತದ ಸಂವಿಧಾನ ಸರ್ಕಾರ ಮತ್ತು ರಾಜಕೀಯ – ವಿದ್ಯಾನಿಧಿ- 2009
18. ರಾಜಶೇಖರ	- ಭಾರತ ಸರ್ಕಾರ ಮತ್ತು ರಾಜಕೀಯ – ಕಿರಣ್ – 2008
19. ಡಿ.ಉ.ದೇವೇಗೌಡ	- ಭಾರತ ಸಂವಿಧಾನ ಮತ್ತು ರಾಜಕೀಯ- ಚೇತನ ಬುಕ್ ಹೌಸ್ – 2008
20. ಎಂ.ವಿ.ಆರ್.ರಾವ್	- ಅಂತರರಾಷ್ಟ್ರೀಯ ಕಾನೂನು – ಕನ್ನಡ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ, ಮೈಸೂರು ವಿವಿ -1987
21. ಕಬ್ಬೂರಿ	- ಭಾರತ ಸಂವಿಧಾನ – ವಿಜ್ಞಾನ ಪಬ್ಲಿಕೇಶನ್ಸ್ – 2004

VI SEMESTER

PAPER 6.2: INDIAN CONSTITUTION – PROCESSES AND ISSUES

1. **Amendments of the Constitution : Methods of Amendment (Prodecure)**
Important Amendments: 1st, 24th, 25th, 42nd, 73rd, 74th, 77th, 93rd, Right to Education
2. **Election & Election Commission : Constitutional & Statutory Provisions. Election Commission – Organisation and Functions, Electoral Reforms**
3. **Political Parties, Interest Groups and Public Opinion : Organisation & Functions of Political Parties, National & Regional Parties, Reforms of Political Parties, Interest Groups, Types and Mode of Operation, Media and Public Opinion**
4. **Union-State Relations : Unitary & Federal Features, Legislative, Administrative & Financial Relations, Impact of Coalition Politics on Union-State Relations, State Autonomy & Sarkaria Commission Report**
5. **Major Issues : Secularism, Communalism, Social Justice, Regional Disparities, Internal Challenges to Nationhood, Right to Information, Environmental Protection, Role of National and State Commissions in the Protection of Human Rights**

Books for Reference

Author	Title
1. R.C.Agarwal	- Indian Government and Politics – S.Chand & Co- 2007
2. V.D.Mahajan	- Constitution of India – S.Chand & Co-2006
3. Morris Jones	- Government & Politics of India –Author Press 1988
4. D.D.Basu	- Introduction to the Constitution of India–Wadhwa – 2010(Reprint)
5. Srivatsava	- Indian Government and Politics-SBD-1982
6. Subhas Kashyap	- Our Parliament-NBT-1988
7. V.N.Shukla	- Constitution of India- Eastern Books – 1997
8. M.V.Pylee	- An Introduction to the Constitution of India-VIK-2007(Reprint)
9. R.B.Guttal	- The Constitution of India – Ajantha – 1990
10. Subhas Kashyap	- Constitutional Reforms, Problems, Prospects, Radha Pub- 2004
11. K.K.Ghai	- Indian Government and Politics- Kalyani Publishers-2005
12. ಡಾ.ಎಂ.ಪಿ.ಭುವನೇಶ್ವರ ಪ್ರಸಾದ್	- ಭಾರತದ ಸಂವಿಧಾನ – ಕಲಾ ಪ್ರಕಾಶನ – 1998
13. ಡಾ.ಎಂ.ಪಿ.ಭುವನೇಶ್ವರ ಪ್ರಸಾದ್	- ಭಾರತ ಸಂವಿಧಾನದ ಪರಿಚಯ – ಶಬರಿಮಲೆಯನ್ – 2005
14. ಮಂಗಳ ಮೂರ್ತಿ	- ಭಾರತ ಸಂವಿಧಾನ, ಮಾನವ ಹಕ್ಕುಗಳು ಮತ್ತು ಪರಿಸರ – ಚೇತನ ಬುಕ್ ಹೌಸ್ – 2007
15. ಹೆಚ್.ಆ.ರಾಮಕೃಷ್ಣ	- ಭಾರತ ಸಂವಿಧಾನ – ಲಲಿತ ಪ್ರಕಾಶನ – 2006
16. ಶೀಲವಂತರ	- ಭಾರತದ ಸಂವಿಧಾನ ಸರ್ಕಾರ ಮತ್ತು ರಾಜಕೀಯ – ವಿದ್ಯಾನಿಧಿ- 2009
17. ರಾಜಶೇಖರ	- ಭಾರತ ಸರ್ಕಾರ ಮತ್ತು ರಾಜಕೀಯ – ಕಿರಣ್ – 2008
18. ಡಿ.ಐ.ದೇವೇಗೌಡ	- ಭಾರತ ಸಂವಿಧಾನ ಮತ್ತು ರಾಜಕೀಯ- ಚೇತನ ಬುಕ್ ಹೌಸ್ – 2008
19. ಕಬ್ಬೂರಿ	- ಭಾರತ ಸಂವಿಧಾನ – ವೀಣಾ ಪಬ್ಲಿಕೇಶನ್ಸ್ – 2004
20. ಶೀಲವಂತರ	- ಭಾರತದ ಸಂವಿಧಾನಾತ್ಮಕ ವ್ಯವಸ್ಥೆ – ವಿದ್ಯಾನಿಧಿ – 2001

B.A. - (OPTIONAL - Tourism and Travel Management)
Detailed Curriculum - (2004-2005)

(SEMESTER SCHEME)

3 years - 6 Semesters

SEMESTER I
PAPER I - TOURISM - FOUNDATION AND HISTORY

SEMESTER II
PAPER II - TOURISM PRODUCT

SEMESTER III
Paper III - TRAVEL AGENCY AND TOUR OPERATOR ORGANISATIONS

SEMESTER IV
Paper IV - TOURISM MANAGEMENT

SEMESTER V
Paper V - TOURISM POLICY
Paper VI - TOURISM IN INDIA

SEMESTER VI
PAPER VII - ENTREPRENEURSHIP DEVELOPMENT PROGRAM
PAPER VIII - EMERGING CONCEPTS FOR EFFECTIVE TOURISM DEVELOPMENT

Mohini Patel
28-06-2008

PAPER I

TOURISM - FOUNDATION AND HISTORY

1. **INTRODUCTION TO TOURISM AS AN INDUSTRY**
Definition, Meaning, Scope, Nature, Importance, Components, Typology, Motivating factors, Classification.
2. **ORIGINS OF TOURISM**
Tourism in ancient times. Forerunners of Modern Tourists - Peregrines - Traders by land and sea-pilgrims - Trips sprives to cure ailments. Influence of the French Revolution on Tourism.
3. **ASCENT OF TOURISM**
Beginnings of Tourism to 1849 - Tourism upto the First World War (the age of Coal and Steam) - origin of conducted Tourists Services of Thomas Cook - Tourism 1914-1935, Effects of the World Economic Depression on Tourism. Political Aspects of Tourism during Second World War, Impact of Second World War on Tourism, Growth and development of tourism as an industry in India since independence
4. **THE INTERNATIONAL TOURIST ORGANIZATIONS**
The International Union of Official Travel Organisation (IUOTO), International Union of National Tourist Propaganda (INUTPC), The World Tourism Organization (WTO), UFTAA, IATA, WTTC, PATA, ASTA.

BOOKS FOR REFERENCE:

29. Dennis L Foster - An Introduction to Travel and Tourism
30. Christopher J.Holloway - The Business of Tourism : Macdonald and Evans, 1983.
31. Stephan J Page - Tourism Management
32. Tapan K.Pandya and Srikantika Mishra - Tourism Industry in India
33. A.K.Bhatia - Tourism Development, Principles and Practices : Sterling publishers (p) Ltd New Delhi.
34. Anand M.M - Tourism and Hotel Industry in India : Sterling publishers (p) Ltd New Delhi.
35. Kaul.R.H - Dynamics of Tourism : A trilogy Sterling Publishers (p) Ltd New Delhi.
36. IITM - Growth of Modern Tourism - monograph : IITM, New Delhi, 1989.
37. IITM - Tourism as an industry-monograph : IITM, New Delhi, 1989.
38. Burhat and Medlick - Tourism - Past, present and future
39. Wahab, S.E - Tourism Management, Tourism International Press, London 1986.
40. Brymer, Robert A - Introduction to Hotel and Restaurant Management : Hub publication, Co.,Lowa, 1984.
41. Ricline J.R.Brent - Travel and Tourism Hospitality Research, London, 1982.
42. Surinder Aggarwal - Travel agency.
43. A.K Bhatia - Introduction to Tourism, New Delhi, 2002

PAPER II

TOURISM PRODUCT

1. **RESOURCES: NATURAL AND MOUNTAIN**
Tourist Resources - Definition and Differentiation, Natural Tourist Resources - Rich Diversity in Landform, Landscape, Outstanding Geographical features, Climate, Water Bodies, Flora, Fauna. Mountain Tourist Resource - with special reference to the Himalayas and other Hill Stations across India
2. **RESOURCES: ISLANDS, BEACHES AND DESERTS**

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Islands and Beaches - with special reference to Andaman and Nicobar Islands, Goa, Lakshadweep and other potential destinations. Coastal Areas, Desert Resources in India - Geological structure, existing facilities, Safaris.

3. SOCIO CULTURAL RESOURCES I

Performing Arts of India, Classical Dances and Dance Styles, Centre of Learning and Performances. Indian Folk Dances. Music and Musical Instruments - Schools of Indian Music. Handicrafts of India as potential Tourist Resources.

4. SOCIO CULTURAL RESOURCES II

Fairs and Festivals - Social, Religious, and Commercial, Tourist Promotional Fairs - Kite Festival, White Water Festival, Snake Boat Race, etc. Indian Folk Culture, Indian Folk Culture - Custom and Costumes, Settlement Patterns, Religious Observation, Folk-lore and Legends

5. HISTORICAL RESOURCES

Architectural Heritage of India - India's Architectural Styles adopted over the ages. Historic Monuments of Tourist significance, ancient medieval and modern their spatial and religious dimensions. Important Historic / Archaeological sites, Museums, Art Galleries, Libraries their location, assets and characteristics. Religious Shrines / Centres - Hindu, Buddhist, Jain, Sikh, Muslim, Christian, and Others. Centres - Ayurveda, Yoga, Meditation.

Note: A tour of local places of interest should be arranged

ROOMS FOR REFERENCE:

14. Percy Brown - Indian Architecture Hindu and Buddhist period.
15. Dennis L Foster - An Introduction to Travel and Tourism
16. Tapan K. Panda and Sitikantha Mishra - Tourism Industry in India
17. Harle J.C - The Art and Architecture of Indian Sub Continent.
18. Stephan J Page - Tourism Management
19. Bhartiya Vidya Bhawan - Imperial Unity
20. Bhartiya Vidya Bhawan - Classical age.
21. Acharya Ram - Tourism and Cultural Heritage of India: ROSA Publication (Jaipur, 1986)
22. Basham A.L. - The Wonder that was India: Rupa and Co. Delhi-1988.
23. The Gazette Of India - History and Culture, Vol.2, publication division, Ministry of Information and Broadcasting, Government of India, 1988.
24. Hussain A.K. - The National Culture of India, National Book Trust, New Delhi-1987.
25. Mukerjee R.K. - The Culture and art of India-George Allen Unwin Ltd, London 1959.

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Paper III --

TRAVEL AGENCY AND TOUR OPERATOR ORGANISATIONS

1. **TRAVEL AGENCY AN INTRODUCTION**
Definition, Functions, Organizational Structure of Travel Agencies and Tour Operators.
2. **TYPES OF TRAVEL AGENCIES, DUTIES, AND SERVICES**
Types of Travel Agencies and Tour Operators. Procedures to become a Travel Agency or
Tour Operator in India, Duties and Responsibilities of Staff and Managers, Services and Products
offered by Travel Agencies and Tour Operators. Revenue or Income of the Travel Agents and
Tour Operators.
3. **AIRLINE TICKETING**
Introduction to Airline Ticketing, Airline Geography, Domestic Air Ticketing and Fare
Calculation, Airfare Calculation
4. **RAILWAYS AND AIRLINES**
Indian Railways, Brief Study of International Railways, Indian Airlines, Private Airlines in India,
The Cruise Industry
5. **INTERNATIONAL TRAVEL REGULATIONS**
Inbound and Outbound Regulations, Passports, Visa, Permits, Economic Regulations, Customs,
Airport Tax, Currency Regulations, Health Regulations.

BOOKS FOR REFERENCE:

23. Mohinder Chaud - Travel Agency Management An Introductory Text.
24. Dennis L Foster - An Introduction to Travel and Tourism
25. Stephan J Pace - Tourism Management
26. Tapan K Panda and Sitikantha Mishra - Tourism Industry in India
27. Merissen Jome.W - Travel Agents and Tourism.
28. David H.Howel - Principal and Methods of scheduling reservations(national publishers) 1987.
29. Agarwal, Surinder - Travel Agency Management (Communication India 1983)
30. Geo, Chack - Professional Travel agency management: Prentice Hall London,1990.
31. Bhatia A.K - Tourism Development-principles and policies sterling publishers, 1991 New Delhi.
32. Iliam Coriye - Travel in India.
33. National Publishers - The World of Travel, National Publishers Delhi 1979.

TOURISM MANAGEMENT

1. CHARACTER OF MODERN TOURISM

Prevailing types of tourism, Changes in the facilities, trade unions and tourism. Means of accommodation (hostel, dormitory, prices etc.)

2. TOURISM MARKETING

Service dimension and characteristics of tourism product, Marketing functions in tourism, promotion of tourism, Customer Relation Management (CRM), Public Relations and Communication for Tourism Managers

3. TOURISM ACCOMMODATION

Essentials of Tourist accommodation and catering unit, Primary and Secondary forms of Accommodation, Hotels, Motels, Resorts, Floatels, Classification of Hotels. Basis for Classification. Room Rates, Types, Reservation and Billing Procedures etc.

4. TRANSPORTATION

Importance and its impact on Tourism - modes of Transport (Railways, roads, shipping and Airways) journey-type of ticket and principles of ticketing. Travel agency (advisory bureau, customs office, passport office, leading travel agencies).

5. MARKETING STRATEGIES AND LINKAGES

Developing Marketing Strategies for Service Firms. Linkage of Marketing in Tourist components - Travel Agency, Tour Operators, Hotels and other forms of Accommodation, Catering, Food and Nutrition

Note: The students shall have institutional training for 3 weeks at leading Tourist offices, customs office, tourist hotels and agencies.

BOOKS FOR REFERENCE:

27. P C Sinha - Tourism Marketing
28. Dennis L. Foster - An Introduction to Travel and Tourism
29. Stephan J Page - Tourism Management
30. Tapan K Panda and Sitikantha Mishra - Tourism Industry in India
31. Kotler Philips - Marketing Management, PHI, New Delhi.
32. Maccarthy D.K.J, Basic Marketing-A Management Approach.
33. Douglas Foster - Travel and Tourism Management.
34. Negi.M.S - Tourism and Hoteliering.
35. Wahab.S.Grampter - Tourism Marketing, Tourism International Press, London 1976.
36. Stephan.F.Witt - Tourism Marketing and Management Handbook, prentice Hall, New York, 1985.
37. Renal A. Nykiel L - Marketing in Hospitality Industry (2nd ED.) Van Nestrland Reinhold,1986.
38. Maclean, Hunter - Marketing Management (Tourism in your business), Canadian Hotel and Restaurant Ltd, 1984.
39. Kenneth E.Clow and David L.Kurtz - Services Marketing, Biztantra Publications.

TOURISM POLICY

1. TOURISM POLICY

Management Strategies, Tourism Policy Analysis, Tourism Legislation Beginnings of statistical measurement in Tourism Statistics of Domestic Tourism – Holiday Surveys (accommodation and passenger surveys) – Statistics of International surveys.)

2. TOURISM PLANNING

Features of Tourism planning, Policy of Tourism – Leisure and Resources – Geographical pattern. Infrastructure and facilities – Planning in Urban and Rural area – Conservation and Management of places of Tourist attraction.

3. ECONOMICS OF TOURISM

Impact of tourism on national and international economic activity, Tourism and international trade and balance of payments

4. IMPACTS AND WORLD HERITAGE CENTERS

- Impacts of Tourism - Economical, Social, Physical, and Environmental
- World Heritage Tourist Centres, Concept and list

BOOKS FOR REFERENCE:

21. Ratandeep Singh - National Eco-Tourism and Wildlife Tourism
22. Prabhas Chandra - International Eco-Tourism
23. Tapan K Panda and Sitikantha Mishra - Tourism Industry in India
24. Stephen J Page - Tourism Management
25. Praveen Seethi - Handbook on Sustainable Tourism
26. Reports of World Tourism Organization.
27. State Tourism Policy of Karnataka, Andhra Pradesh, Tamilnadu, Kerala, Rajasthan, Assam

TOURISM IN INDIA

1. **HISTORY OF TOURISM IN INDIA**
Tourism during the golden era and the great civilisations, Impact of invasions and foreign rule in India, Development of tourism in India since 1947
2. **INDIA AS A TOURIST DESTINATION**
India – A Land for all reasons and all seasons. Tourism resources of India – Richness and diversity of tourism resources of India, Branding of India and Indian states, Promotion of tourism in India
3. **TOURIST FACILITIES IN INDIA**
Sargent Committee Report 1945, Indian Constitution and Tourism, Tourist Organisation, National Tourist Organisation, Creation of the Directorate General of Tourism. Regional Offices Indian Tourism Development Corporation. Accommodation industry-Hotel standards and rate structure committee 1957, shortage of hotel accommodation.
4. **FOREIGN TOURISTS AND INDIAN VALUE SYSTEM**
Indian Airways. Indian Railways, Defects in Indian Tourism. Unsatisfactory transportation levels of Tourist organisation, National/Regional.

Note: A tour of about three weeks to important places of Art and Architecture, Sea shores and places of historic importance shall be arranged for the students.

BOOKS FOR REFERENCE:

1. Percy Brown - Indian Architecture Hindu and Buddhist period.
2. Dennis L. Foster - An Introduction to Travel and Tourism
3. Tapan K Panda and Sitikantha Mishra - Tourism Industry in India
4. Harle J.C - The Art and Architecture of Indian Sub Continent.
5. Stephan J Page - Tourism Management
6. Bhartiya Vidya Bhawan - Imperial Unity.
7. Bhartiya Vidya Bhawan - Classical age.
8. Acharya Ram - Tourism and Cultural Heritage of India: ROSA Publication (Jaipur, 1986)
9. Basham.A.L - The Wonder that was India: Rupa and Com Delhi-1988.
10. The Gazette Of India - History and Culture, Vol.2, publication division, Ministry of Information and Broadcasting, Government of India, 1988.
11. Hussain.A.K - The National Culture of India, national Beek Trust, New Delhi-1987.
12. Mukerjee.R.K - The Culture and art of India-George Allen Unwin Ltd, London 1959.

PAPER VII

ENTREPRENEURSHIP DEVELOPMENT PROGRAM

1. **ENTREPRENEURSHIP**

Introduction to Entrepreneur, Entrepreneurship and Enterprise - Importance and relevance of the entrepreneur - Factors influencing entrepreneurship - Pros and Cons of being an entrepreneur - Women entrepreneurs, problems and promotion - Types of Entrepreneurs - Characteristics of a successful entrepreneur - Competency requirement for entrepreneurs - Awareness of self competency and its development

2. SMALL SCALE INDUSTRIES

Small scale industries/ Tiny industries/Ancillary industries/ Cottage Industries - definition, meaning, product range, capital investment, ownership patterns - Importance and role played by SSI in the development of the Indian economy - Problems faced by SSI's and the steps taken to solve the problems - Policies governing SSI's.

3. STARTING A SMALL INDUSTRY

To understand what constitutes a business opportunity, scanning the environment for opportunities, evaluation of alternatives and selection based on personal competencies. - An overview of the steps involved in starting a business venture - location, clearances and permits required, formalities, licensing and registration procedures - Assessment of the market for the proposed project - To understand the importance of financial, technical and social feasibility of the project.

4. PREPARING THE BUSINESS PLAN (BP)

What is a BP? Why is it important? Who prepares it?
Typical BP format

- a. Financial aspects of the BP
- b. Marketing aspects of the BP
- c. Human Resource aspects of the BP
- d. Technical aspects of the BP
- e. Social aspects of the BP

Preparation of BP - Common pitfalls to be avoided in preparation of a BP

5. IMPLEMENTATION OF THE PROJECT

Financial assistance through SFC's, SIDBI, Commercial Banks, KSIDC, KSSIC, IFCI, - Non financial assistance from DIC, SISI, EDI, SIDO, AWAKE, TCO, TECKSOK, KVIC - Financial incentives for SSI's, and Tax Concessions - Assistance for obtaining raw material, machinery, land and building and technical assistance - Industrial states - role and types

6. SICKNESS IN SSI'S

Meaning and definition of a sick industry - Causes of industrial sickness
Preventive and remedial measures for sick industries

BOOKS FOR REFERENCE:

41. Mark. J. Dollinger, Entrepreneurship - Strategies and Resources, Pearson Edition.
42. Udai Pareek and T.V. Rao, Developing Entrepreneurship
43. S.V.S. Sharma, Developing Entrepreneurship, Issues and Problems
44. Srivastava, A Practical Guide to Industrial Entrepreneurs
45. Government of India, Report of the committee on Development of small and medium entrepreneurs, 1975
46. Bharusali, Entrepreneur Development
47. Vasanth Desai, Management of Small Scale Industry
48. Vasanth Desai, Problems and Prospects of Small Scale Industry
49. CSV Murthy, Entrepreneurial Development
50. Entrepreneurial Development - Dr. Anil Kumar, S.C. Poornima, Miani K. Abraham, Jayashree K.

PAPER VIII

EMERGING CONCEPTS FOR EFFECTIVE TOURISM DEVELOPMENT

1. RELEVANT CONCEPTS AND APPROACHES FOR EFFECTIVE TOURISM DEVELOPMENT

- National Development Council Report on Tourism Development
- National Action Plan 1992 Onwards
- Policies on Tourism and Civil Aviation
- Tourist Traffic and its improvisation
- Destination Development

2. SUSTAINABLE AND ECO-TOURISM

- Sustainable Tourism and Eco-Tourism – Definition, Functions, Objectives
- National and State Level Eco-Tourism Guidelines

3. WILDLIFE

- National Wildlife Tourism – India
- National and International Guidelines for Wildlife Tourism

4. TOURISM POLICY

- Management Strategies, Tourism Policy Analysis, Tourism Legislation

5. CRM, PR AND COMMUNICATION FOR TOURISM MANAGERS

- Customer Relation Management – Fundamentals
- Importance of Public Relation and Communication Skill in Tourism

BOOKS FOR REFERENCE:-

- Ratandeep Singh - National Eco-Tourism and Wildlife Tourism
- Prabhas Chandra - International Eco-Tourism
- Tapan K Panda and Sitikantha Mishra - Tourism Industry in India
- Stephan J Page - Tourism Management
- Praveen Sethi - Handbook on Sustainable Tourism
- National Development Council Report.
- National Action Plan, 1992.
- Reports of World Tourism Organization.
- Report-Workshop on Tourism Legislation-August 10-11, 1987. IITTM, New Delhi.
- Report-Workshop on Tourism Legislation-February 23-23, 1988

B.A. / B.Sc. – ECONOMICS
SEMESTER SYSTEM – 2003 ONWARDS
SYLLABUS

(TOTAL : 06 - SEMESTERS)

DEPARTMENT OF ECONOMICS
BANGALORE UNIVERSITY
JNANA BHARATHI, BANGALORE – 560 056

Preamble

In order to meet the needs of the dynamic changes taking place around us and also to follow guidelines given by the University Grants Commission, the semester system for B.A. / B.Sc. - Economics has been proposed to be introduced from the academic year 2003 onwards.

A committee of expert academicians was formed to revise the syllabus for B.A. / B.Sc. in Economics on 16-04-2003. Following are the members of the committee who have restructured the syllabus for BA / B.Sc. - Economics.

The committee has submitted the revised syllabus and scheme of examination after deliberating over the above issues from 16-04-2003 to 23-04-2003

Members of the Committee:

Sl.No.	Name of the Member	Name of the College
1	Dr. RVeerachamy	Professor & Chairman Dept. of Economics BUB.
2	Prof. Lorna Raymond,	Mount Carmel College, Bangalore
3	Prof. Ramani Nair	Maharani's Arts College, Seshadri Road, Bangalore - 1
4	Dr. Padmini Rao	The National College, Basavanagudi, Bangalore - 4
5	Prof. S.K. Jayanthi	NMKRV College for Women, Jayanagar, Bangalore - 11
6	Sheshadri G.B.	NMKRV College for Women, Jayanagar, Bangalore - 11
7	Prof. Iravathi N	BMS College for Women, Basavanagudi, Bangalore - 4
8	Prof. M.M Guptha	Seshadripuram College, Bangalore - 1
9	Prof. Krishnaveni	Seshadripuram College, Bangalore - 1
10	Prof. Shobha S.K.	APSE College, N.R. Colony, Bangalore - 19
11	Prof. Nazarath Zabeen	Hasnath College, Lalbagh Road, Bangalore
12	Prof. Subhashini Muthukrishna	St. Joseph College, Bangalore
13	H.R. Krishna Murthy	The National College, Jayanagar, Bangalore - 4
14	Prof. Gangaiah	Vijaya Evening College, Basavanagudi, Bangalore - 4
15	Prof. Venu Gopal B.N.	The National College, Basavanagudi, Bangalore - 4.
16	Prof. B.R. Subbanna	V.V. Puram College of Arts & Commerce, Bangalore - 4

BANGALORE UNIVERSITY						
Department of Economics						
Scheme for BA/B.Sc Semester Degree course in Economics						
Year	Semester	Paper	Title of the Paper	Internal Marks	Theory Marks	Total
I Year	I SEM	1.1	Micro Economics	10	90	100
	II SEM	2.1	Macro Economics	10	90	100
II Year	III SEM	3.1	Quantitative Methods	10	90	100
	IV SEM	4.1	International Economics	10	90	100
III Year	V SEM	5.1	Indian Economy-I	10	90	100
	Elective Papers			10	90	100
	V SEM	5.2 (a)	Development Economics-I			
	V SEM	5.2 (b)	Economic Doctrines-I			
	V SEM	5.2 (c)	Environmental Economics-I			
	VI SEM	6.1	Indian Economy-II	10	90	100
	Elective Papers			10	90	100
	VI SEM	6.2 (a)	Development Economics-II			
	VI SEM	6.2 (b)	Economic Doctrines-II			
	VI SEM	6.2 (c)	Environmental Economics-II			

QUESTION PAPER PATTERN

Maximum Marks for Theory: 90

Internal Marks: 10

PART- A (Conceptual) - (2 x 10 = 20 Marks)

The student shall answer 9 out of 12 questions. The answers to each question shall not exceed 5 to 6 sentences. Due weightage to be given to all modules.

PART- B (Analytical) - (5 x 5 = 25 Marks)

The student shall answer 5 out of 7 questions. This part shall test the analytical ability of the student. The answers to each question shall be about 15 to 20 sentences. This part should have a minimum of one question from each module.

PART-C (Descriptive) - (15 x 3 = 45 Marks)

The student shall answer 3 out of 5 questions. This part shall test the in-depth understanding of the subject, by the student. Each answer shall not exceed four pages of normal handwriting. This part should have at least one question from each module.

Instructions:

1) To Teachers:

The scope of the topic is to be arranged in accordance with the number of hours specified against each topic.

2) To the Board of Examiners:

The selection of questions for each part is to be based on the number of hours allotted to each topic.

I - SEMESTER
MICRO ECONOMICS – PAPER- 1.1
(Compulsory paper)

COURSE OBJECTIVES:

- ▶ *To help students acquire knowledge of some of the important principles and theories of microeconomics.*
- ▶ *To provide the foundation for the study of other branches of economics.*
- ▶ *To develop analytical, reasoning and graphical presentation skills.*
- ▶ *To enable the student to appreciate the utility of economics in day-to-day life.*

METHODOLOGY:

- ▶ *Emphasis to be given to teaching concepts.*
- ▶ *Theories and laws to be taught with the help of tables and diagrams*
- ▶ *Questions to be designed to evaluate a student's ability to use diagrams, explain concepts and evaluate at theoretical levels.*

MODULE - I MICROECONOMICS AND THEORY OF CONSUMPTION

- Scope of microeconomics, limitation and uses. Positive and Normative economics.
- Problem of choice – wants and resources. Basic economic problems common to all economies. Role of price mechanism in a mixed economy. [4 Hrs.]
- Cardinal analysis – Law of diminishing marginal utility, Law of equi-marginal utility. Consumers Surplus (Marshallian). [3 Hrs.]
- Ordinal utility analysis indifference curves – properties, map, price line, consumer equilibrium, price effect, income effect and substitution effect. [5 Hrs.]

[Total : 12 Hours]

MODULE - II DEMAND AND SUPPLY

- Law of demand, Reasons for the downward slope of demand curve, exception to the law, changes in demand. [4 Hrs.]
- Elasticity – kinds, types of price elasticity with diagram, factors determining price elasticity, methods of measurement – per centage method, arc-method, total outlay – method. [6 Hrs.]
- Law of Supply, Changes in supply. [2 Hrs.]

[Total : 12 Hours]

MODULE - III THEORY OF PRODUCTION

- Production function, Law of variable proportions – short-run and long-run. Laws of returns, economies of scale, Iso-quants, Isocosts, production equilibrium. [6 Hrs.]
- Cost – opportunity cost, Real cost, Types – short-run, long-run – Average, Marginal, Fixed, Variable (with diagrams), Long run cost curve. [4 Hrs.]
- Revenue – Average, Marginal, Total. [2 Hrs.]

[Total : 12 Hours]

MODULE - IV PRODUCT PRICING

- Concepts of firm, industry, equilibrium. [1 Hr.]
- Perfect competition, price and output determination, and role of time element in the theory of price determination. [3 Hrs.]
- Monopoly, price output determination, price discrimination. [3 Hrs.]
- Monopolistic competition, Price and output determination, Selling costs, Product differentiation, Wastes in monopolistic competition. [3 Hrs.]
- Oligopoly, features, Duopoly, Monopsony. [2 Hrs.]

[Total : 12 Hours]

MODULE - V FACTOR PRICING

- Nature of factor markets, Marginal productivity theory of distribution. [2 Hrs.]
- Rent – Demand and supply theory, Quasi rent, Transfer earning. [2 Hrs.]
- Wages – Reasons for wage differentials, collective bargaining. [2 Hrs.]
- Interest – Classical, Neo-classical, Keynesian. [2 Hrs.]
- Profit – Dynamic, Innovation, Risk and Uncertainty theory. [2 Hrs.]

READING LIST:

1. Bach, G.L. (1977), *Economics*, Prentice Hall of India, New Delhi
2. Gould, J.P. and Edward P.L. (1996), *Microeconomic Theory*, Richard, Irwin, Homewood.
3. Henderson J and R.E. Quandt (1980), *Microeconomic Theory: A mathematical approach*, McGraw Hill, New Delhi.
4. Heathfield and Wibe (1987), *An Introduction to Cost and Production Functions*, Macmillan, London.
5. Koutsoyiannis, A. (1990), *Modern Microeconomics*, Macmillan.
6. Lipsey, R.G. and K.A. Chrystal (1999), *Principles of Economics* (9th Ed.), Oxford University Press, Oxford.
7. Mansfield, E. (1997), *Microeconomics* (9th Ed.), W.W. Norton and Company, New York
8. Ray, N.C. (1975), *An Introduction of Microeconomics*, Macmillan Company of Indian I.td., New Delhi.
9. Ryan, W.J.L. (1962), *Price Theory*, Macmillan and Co. Limited, London.
10. Samuelson, P.A. and W.D. Nordaus (1998), *Economics*, Tata McGraw Hill, New Delhi.
11. Stonier, A.W. and D.C. Hague (1972), *A Textbook of Economic Theory*, ELBS and Lognman Group, London.
12. Varian, H.R. (2000), *Intermediate Microeconomics: A Modern Approach* (5th Ed), East West Press, New Delhi.

**II- SEMESTER
MACRO ECONOMICS – PAPER – 2.1**

COURSE OBJECTIVES:

- ▶ To enable the student to learn the well formulated principles of macro economics
- ▶ To help the student to understand the integrated working of a modern economy.
- ▶ To provide the basis for the study of other branches of economics.
- ▶ To help the student to appreciate the role of government in the economic functioning of a nation.

MODULE - I MACRO ECONOMICS AND NATIONAL INCOME

- Macro economies, micro-macro paradox, importance and uses of macroeconomics. [3 Hrs.]
- Circular flow of income and wealth [2 Hrs.]
- National income – concepts, methods of calculating national income, problems in the estimation of national income [5 Hrs.]

[TOTAL: 10 Hours]

MODULE - II CLASSICAL AND KEYNESIAN ECONOMICS

- Classical theory of income – output and employment. Say's law of market. Wage price flexibility, critical evaluation [3 Hrs.]
- Keynesian theory of income, output and employment. Effective demand and supply. Consumption function, average and marginal propensity to consume, factors affecting consumption function, investment function – Marginal efficiency of capital. Multiplier, Accelerator, comparison between Classical and Keynesian theories [11 Hrs.]

[TOTAL: 14 Hours]

MODULE - III MONETARY ECONOMICS

- Value of money – cash transaction, cash balance approach – Marshall, Keynes. index numbers – simple weighted. [5 Hrs.]
- Commercial banking – portfolio management, credit creation. [3 Hrs.]
- Central banking, methods of credit control-quantitative, qualitative. [5 Hrs.]

[TOTAL: 13 Hours]

MODULE - IV PUBLIC FINANCE

- Public finance meaning, branches, Principle of maximum social advantage. Sources of public revenue. Canons of taxation – Direct and Indirect taxes. Impact and Incidence.
- Effects of taxation on production, consumption and distribution. [8 Hrs.]
- Public expenditure – causes of growth of public expenditure, Effects of public expenditure on production, consumption and distribution [2 Hrs.]
- Public debt – Sources of public borrowing Methods of debt redemption [2 Hrs.]
- Budget – types. [1 Hr.]

[TOTAL: 13 Hours]**MODULE - V INFLATION**

- Meaning, approaches- demand-pull and cost push. Effects of inflation on production, consumption and distribution.
- Inflationary gap
- Methods to control inflation – fiscal, monetary and administrative measures
- Trade cycles – phases

[TOTAL: 10 Hours]**READING LIST:**

- 1) Ackley, G. (1976), *Macroeconomics, Theory and Policy*, Macmillan Publishing Company, New York.
- 2) Day, A.C.L. (1960), *Outline of Monetary Economics*, Oxford University Press, Oxford.
- 3) Gupta, S.B. (1994), *Monetary Economics*, S.Chand and Co., Delhi.
- 4) Heijdra, B.J. and F.V. Ploeg (2001), *Foundations of Modern Macroeconomics*, Oxford University Press, Oxford.
- 5) Lewis, M.k. and P.D. Mizan (2000), *Monetary Economics*, Oxford University Press New Delhi.
- 6) Shapiro, E. (1996), *Macroeconomic Analysis*, Galgotial Publications, New Delhi.
- 7) Dillard, D. (1960), *The Economics of John Maynard Keynes*, Crosby Lockwood and Sons, London.
- 8) Hanson, A.H. (1963), *A Guide to Keynes*, McGraw Hill, New York.
- 9) Higgins, B.(1963), *Economic Development: Principles, Problems and Policies*, Central Book Depot, Allahabad.
- 10) Keynes, J.M. (1936), *The General Theory of Employment, Interest and Money*, Macmillan, London.
- 11) Kindleberger, C.P. (1958), *Economic Development*, McGraw-Hill Book Company, New York
- 12) Lucas, R. (1981), *Studies in Business Cycle Theory*, MIT Press, Cambridge, Massachusetts.
- 13) Meier, G.M. and R.E. Baldwin (1957), *Economic Development: Theory, History and Policy*, Wiley & Sons Inc., New York.
- 14) Powelson, J.P.c. (1960), *National Income and Flow of Funds Analysis*, McGraw Hill, New York.

III- SEMESTER**QUANTITATIVE METHODS – PAPER- 3.1****(Compulsory paper)****COURSE OBJECTIVES:**

- ▶ To help students to acquire some Basic skills in both mathematics and statistics.
- ▶ To develop analytical, reasoning and graphical presentation skills.

METHODOLOGY:

- ▶ Emphasis to be given on teaching basic concepts and definitions.
- ▶ Theories and laws to be taught with the help of simple mathematics and diagrams

- **Question to the designed to evaluate a student's ability to use diagrams, explain concepts and evaluate at theoretical levels.**

MODULE – I

- Functions: Linear, Quadratic exponential and logarithmic functions and their simple uses in economics. Market equilibrium –effects of taxes on equilibrium price and quantity. Simple linear Macro models.
- Interest compounding and exponential functions.
- Matrices: Types of matrices-Elementary operations on matrices. Inverse matrix. Methods of solving simultaneous equations using matrices. Determinants and their uses in solving simultaneous equations.

[TOTAL: 15 Hours]

MODULE – II

- Calculus: Simple derivative rules-Partial derivatives. Simple rules of Integration.
- Elasticity theorems- Price Income and cost elasticity. Partial Elasticities of demand-Substitutes and compliments
- Calculation of Total revenue and Total costs curves from their respective MR and MC. Consumer and producer surpluses.
- Maxima and Minima of functions: Simple applications from microeconomics.

[TOTAL: 15 Hours]

MODULE – III

- Definition of statistics: Primary and secondary data. Methods of collecting primary data. Tabulation and presentation of data- graphical representation data.
- Measures of central tendency: Mean, Median and Mode- Geocentric and harmonic means.
- Measures of dispersion: Range, Mean deviation, Inter quartile range and standard deviation.

[TOTAL: 15 Hours]

MODULE – IV

- Correlation analysis: Karl Pearson Coefficient of Correlation. Spear man's Rank correlation.
- Regression analysis: Y on X and X on Y regression calculations.
- Time series analysis: Components of time series-Methods of decomposing trend, Seasonal and cyclical components.

[TOTAL: 15 Hours]

MODULE – V

- Index Numbers: Fixed and Chain based simple relatives. Calculation of composite index numbers.
- Index numbers by aggregates: Laspeyer's, Paache's, and Fisher's index numbers. Time and factor reversal tests.

[TOTAL: 15 Hours]

BASIC READING LIST

1. Allen, R.G.D. (1974), Mathematical Analysis for Economists, Macmillan Press, London.
2. Veerachamy R (2002) Quantitative Methods for Economists New Age International Publishers, New Delhi.
3. Black, J. and J.F. Bradley (1973), Essential Mathematics for Economists, John Wiley and Sons.
4. Chiang, A.C. (1986), Fundamental Methods of Mathematical Economics (3rd Edition), McGraw Hill, New Delhi.
5. Croxton, F.E., D.J. Cowden and S. Klein (1973), Applied General Statistics, Prentice Hall, New Delhi.
6. Gupta, S.C. and V.K. Kapoor (1993), Fundamentals of Applied Statistics, S. Chand and Sons, New Delhi.

7. Speigal, M.R. (1992), Theory and Problems of Statistics, McGraw Hill Book, London.

IV- SEMESTER
INTERNATIONAL ECONOMICS – PAPER – 4.1
(Compulsory paper)

COURSE OBJECTIVES:

- *To enable the students to learn the fundamental theories of international economics.*
- *To enable the students to apply the knowledge gained from the study of micro and macroeconomics in the field of international economics.*
- *To enable the students to understand the international trade system as it exists today.*

MODULE – I THEORIES OF INTERNATIONAL TRADE

- Meaning and importance of international trade [1 Hr.]
- Distinction between interregional and international trade [1 Hr.]
- Classical theories of international trade – Adam Smith and David Ricardo. [3Hrs.]
- General equilibrium analysis – production possibility curve – community indifference curve [3 Hrs.]
- Heckscher-Ohlin theory – equilibrium under increasing cost. [3 Hrs.]
- Factor price equalization theorem – Offer curves – meaning, reciprocal demand. [1 Hr.]

[TOTAL: 14 Hours]

MODULE – II TRADE AND COMMERCIAL POLICY

- Terms of trade – meaning and concepts – factors – gross, net income terms of trade. [4 Hrs.]
- Trade and development – Prebisch-Singer thesis [2 Hrs.]
- Free trade Vs protection (arguments for and against) [2 Hrs.]
- Tariffs – meaning, types, effects [4 Hrs.]
- Quotas – meaning and types [1 Hr.]

[TOTAL: 14 Hours]

MODULE – III FOREIGN EXCHANGE

- Foreign exchange – meaning & determination of foreign exchange rate [1Hr.]
- Demand and Supply theory of foreign trade (Balance payment theory) [2 Hrs.]
- Purchasing power parity theory [2 Hrs.]
- Fixed and Flexible exchange rate – merits and demerits [3 Hrs.]
- Balance of trade and Balance of payment – causes for disequilibrium of balance of payment – methods to correct disequilibrium [4 Hrs.]

[TOTAL: 13 Hours]

MODULE – IV INTERNATIONAL MONETARY INSTITUTIONS

- International Monetary Fund [IMF] – Objectives – functions, international liquidity [3 Hrs.]
- World Bank [2 Hrs.]
- Asian Development Bank [ADB] [1 Hr.]
- International Development Association. [IDA] [1 Hr.]
- International Financial Corporation. [IFC] [1 Hr.]

[TOTAL: 8 Hours]

MODULE – V ECONOMICS OF INTEGRATION

- Meaning of economic integration [1 Hr.]
- Theory of customs union – partial equilibrium analysis – European Union – objectives and working – Euro currency [2 Hrs.]
- South Asian Association for Regional Co-operation [SAARC]. [1 Hr.]
- Foreign Capital – Role and sources of foreign capital
 - Foreign Direct Investment [F.D.I.]
 - Foreign Institutional Investment [F.I.I.]

- Multinational Corporation (M.N.C.) [3 Hrs.]
- General Agreement on Trade and Tariff [GATT] – origin – Uruguay round (Dunkel draft) [2 Hrs.]
- World Trade Organisation [W.T.O] – Factors leading to Globalization. [2 Hrs.]

[TOTAL: 13 Hours]

READING LIST:

1. Kindle Berger C.P. *International Economics*
2. Keenan P.B. *The International Economy*
3. Krugman P.R. and M. Obstfeld – *International Economics, theory and policy*
4. Ellsworth P – *International Economics*
5. Mannur H.G. – *International Economics*
6. M.I. Jhingran – *International Economics*

V- SEMESTER INDIAN ECONOMY – PAPER- 5.1 (PART-A) (Compulsory paper)

COURSE OBJECTIVES

- To enable a student to have an overview of the working of the Indian economy.
- To enable a student to understand the changing trends in the Indian economy.
- To enable a student to understand the leading issues in India's economic development

MODULE I STRUCTURE OF INDIAN ECONOMY

- India – developing economy, features, economic and non- economic [3 Hrs]
- National income – trends, composition, [5 Hrs]
- Regional inequalities – measures to reduce regional inequalities, wage, employment, poverty, poverty line, extent, poverty alleviation programmes. [4 Hrs]

[TOTAL: 12 Hours]

MODULE II DEMOGRAPHIC PROFILE

- Trends in population growth – growth rate, density, age, sex, size, composition, and population policy – 2000 [5 Hrs.]
- Changes in occupational structure, unemployment – types, extent, measures to reduce unemployment [5 Hrs.]
- Rural, Urban migration – extent [2 Hrs.]

[TOTAL: 12 Hours]

MODULE III AGRICULTURE

- Trends in agricultural production, causes of low production. [2 Hrs.]
- Agricultural finance – co-operative credit, problems and prospects – NABARD [3 Hrs.]
- Agricultural marketing – defects, agricultural prices – procurement price, public distribution system [P.D.S.] [4 Hrs.]
- Irrigation – defects, modern irrigation systems – watershed development, dry land farming. [3 Hrs.]

[TOTAL: 12 Hours]

MODULE IV INDUSTRY

- Industrial policy resolution -1991 [3 Hrs.]
- Problems of public sector enterprises – disinvestment. [3 Hrs.]
- Engineering industry – information technology (I.T) industry [3 Hrs.]
- Small scale industries – problems, prospects and challenges. [3 Hrs.]

[TOTAL: 12 Hours]

MODULE V INFRASTRUCTURE (PHYSICAL AND SOCIAL)

- Sources of power in India – conventional [2 Hrs.]
- Non-conventional energy, energy crisis, power sector reforms [4 Hrs.]
- Universal promotion of primary education, role of government and N.G.O's [3 Hrs.]

- Health sector – immunization, maternal and child health strategies, prevention of communicable diseases [3 Hrs.]

[TOTAL: 12 Hours]

READING LIST

1. Alak G - *Indian Economy, Its nature and problems*
2. Rudder Dutt - *Indian Economy*
3. Dhingra I.C. - *The Indian Economy*
4. Misra SK and V.K. Puri - *Indian Economy Its Development Experience*
5. Uma Kapila - *An overview of Indian Economics - volume I - IV*
6. Govt. of Karnataka - *Economic Survey (Latest year)*
7. Govt. of Karnataka - *Karnataka at Glance*
8. O.D. Heggade - *Karnataka Economy, Kannada*
9. T. Nanje Gowda - *Karnataka Economy (IIA) Conference*

V- SEMESTER**DEVELOPMENT ECONOMICS- I : PAPER- 5.2 (A) ((PART-A)
(Optional paper)****COURSE OBJECTIVES :**

- ✓ To enable a student to learn the fundamental concepts of Development economics
- ✓ To enable a student to develop a logical and analytical view of issues in today's world
- ✓ To enable a student to relate learning to reality in case of development issues like poverty, technology, human resource development etc.

MODULE – I FUNDAMENTAL CONCEPTS

- Meaning of economic development – distinction between economic growth and economic development [2 Hrs.]
- Measurement of economic development – GNP, PCI, PQLI, HDI, human capabilities, sustainable development [3 Hrs.]
- Gender empowerment - index of development (GED) Factors determining economic development – economic and non-economic factors [3 Hrs.]
- Obstacles to development – vicious circles of poverty, market imperfections social faces. [4 Hrs.]

[TOTAL: 15 hours]

MODULE – II NATURAL RESOURCES AND DEVELOPMENT

- Role of natural resources and its use in economic development [3 Hrs.]
- Reasons for environmental degradation – air, water, and forests [2 Hrs.]
- Meaning of environmental economics ([1 Hr.]
- Market failures to control degradation, choice of instruments – govt. intervention that is polluter pay principle. Awareness and community participation [6 Hrs.]

[TOTAL: 12 hours]

MODULE – III HUMAN RESOURCE AND DEVELOPMENT

- Importance of HRD in economic development. [1 Hr.]
- Components of human capital formation. [2 Hrs.]
- Manpower planning – meaning, manpower shortages, manpower surpluses, strategy for manpower planning. [5 Hrs.]
- Entrepreneurship and development, types and role. [2 Hr.]

[TOTAL: 10 hours]

MODULE – IV CAPITAL RESOURCES AND DEVELOPMENT

- Importance of capital formation – causes for low capital formation [2 Hrs.]
- Sources of finance for economic development – domestic resources, savings, taxation, deficit financing, public borrowings [4 Hrs.]
- External sources – foreign capital – role of foreign capital – foreign aid – tied and untied aid. Private direct investment- constraints. [3 Hrs.]

[TOTAL: 9 hours]

MODULE – V TECHNOLOGY AND DEVELOPMENT

- Role of technology in economic development – channels of technology transfer – problems [2 Hrs.]
- Appropriate technology for developing countries [1 Hr.]
- Choice of techniques labour intensive technology, capital intensive technology [4 Hrs.]
- Capital output ratio (COR), Incremental capital output ratio (ICOR), determinants and importance, investment criteria in economic development. [4 Hrs.]
- Capital turnover, SMP, BOP criteria. [3 Hrs.]

[TOTAL: 14 hours]**READING LIST:**

- 1) Ray Debraj - *Development Economics*
- 2) Hent Diana - *Economic theories of Development – An analysis of competing paradigm*
- 3) Gerald M Meier - *Leading issues in Economic Development*
- 4) Meier and Baldwin - *Economic Development*
- 5) Higgins B - *Economic Development Past and Present*
- 6) Todaro - Micheal - *Economic Development*
- 7) Lekhi - *Development Economics*
- 8) M.L. Jhingan - *Economics of Development and planning*
- 9) Mishra and Puri - *Economics of Development and planning*
- 10) Das Debendra K - *Globalisation and Development – Experience and Challenges*. Deep and Deep Publication
- 11) Sen Gupta Ramprasad - *Ecology and Economics*, Oxford University Press
- 12) World Bank Reports - Various issues
- 13) Human Development - Various issues
- 14) Asian Development - Various issues

V- SEMESTER**ECONOMIC DOCTRINES – I : PAPER 5.2(B) (PART – A)
(Optional Paper)****COURSE OBJECTIVES:**

- To enable a student to understand the rich contributions of eminent thinkers to economic thought.
- To enable a student to understand the evolution of economic ideas over time.
- To enable a student to understand the importance of the economic ideas as developed by various thinkers.

MODULE - I PRE-CLASSICAL ECONOMIC IDEAS

- Significance of the study of economic doctrines [2 hrs.]
- Ancient economic thought – Hebrew, Greek and Roman [2 Hrs.]
- Mercantilism – Mercantilist ideas, representative mercantilist, decline of mercantilism. [4 Hrs.]
- Physiocracy – factors giving rise to Physiocracy – ideas – representative. Physiocrats, decline of Physiocracy. [4 Hrs.]

[TOTAL: 12 Hours]**MODULE - II CLASSICAL SCHOOL**

- Tenets of Classicism [2 Hrs.]
- Economic ideas of Adam Smith [2 Hrs.]
- Thomas Robert Malthus [2 Hrs.]
- David Ricardo [2 Hrs.]
- J.B. Say [2 Hrs.]
- J.S. Mill [2 Hrs.]

MODULE III SOCIALIST SCHOOL**[TOTAL: 12 Hours]**

- Pre-socialists – Sismondi [2 Hrs.]
- Robert Owen [2 Hrs.]
- Proudhon [2 Hrs.]
- Karl Marx – materialistic interpretation, dialectical materialism, class struggle, theory of surplus value, capitalist crisis, Marxism and Classicism, Marx and Gandhi [6 Hrs.]

MODULE IV MARGINAL SCHOOL**[TOTAL: 12 Hours]**

- Significance of the Marginal School [1 Hr.]
- Ideas of the Marginal school [1 Hr.]
- Contributions of Gossen [1 Hr.]
- Karl Menger [2 Hrs.]
- W.S. Jevons [2 Hrs.]
- Leon Walras [2 Hrs.]
- Austrian School [2 Hrs.]
- Bohm Bawerk [2 Hrs.]

MODULE V NEO-CLASSICAL SCHOOL**[TOTAL: 12 Hours]**

- Birth of the Neo-classical school [1 Hr.]
- Contributions of Alfred Marshall [3 Hrs.]
- Chamberlain [3 Hrs.]
- Mrs. Joan Robinson [3 Hrs.]
- J.B. Clark [2 Hrs.]

READING LIST:**[TOTAL: 12 Hours]**

1. Alexander Gray, *The Development of Economic Doctrines*
2. Arthur Mounce, *Early Economic Thought*
3. Eduard Whittaker, *Schools and Streams of Economic thought*
4. Ganguly, *Indian Economic Thought*
5. Guide and Rist, *A History of Economic Doctrines*
6. Hajela T.N., *History of Economic Thought*
7. Haney L.H., *History of Economic Thought*
8. Lekachaman R, *A History of Economic Ideas*
9. Mc Connel J.W., *Ideas of Great Economists*
10. Puttaswamaiah, *Nobel Economists*
11. Spiegel H.W., *The Development of Economic Thought*
12. William J Barber, *A History of Economic Thought*

V-SEMESTER**ENVIRONMENTAL ECONOMICS-I : PAPER – 5.2 (C) (PART-A)**
*(Optional paper)***COURSE OBJECTIVES:**

- *To build a student's knowledge of the conceptual and theoretical foundation of environmental economics as a special branch of economics.*
- *To appraise a student with emerging environmental issues and policies at national and international levels.*

MODULE -I INTRODUCTION TO ENVIRONMENTAL ECONOMICS

- Environmental economics. need, nature and scope. Ecology and Resource economics. Nature and types of environmental goods [3 Hrs.]
- Individual preference regarding environmental protection – Social choice. [2 Hrs.]

- Cost benefit approach to environment. [3 Hrs.]
- Public goods and private goods, externality, Efficiency and markets – market failure, Pigovian fees, polluter pay principles, limits to growth theory. [4 Hrs.]

[TOTAL: 12 Hours]

MODULE - II INTRODUCTION TO DEVELOPMENT ECONOMICS

- Meaning, factors in development, measures, obstacles to development [3 Hrs.]
- Role of natural resources, population, capital, technology, entrepreneur and state in development. [5 Hrs.]
- Relationship between development and environment economics. [4 Hrs.]

[TOTAL: 12 Hours]

MODULE - III NATURAL RESOURCE ECONOMICS

- Basic concepts – current, potential and resource endowment, renewable, non-renewable. [3 Hrs.]
- Rate of Marketing and regeneration, Rate of extraction and environment cost, Rate of resource exploitation and technological progress. [4 Hrs.]
- Economics of exhaustible resources, resource scarcity, managing renewable resources, free access and problem of common property resources. [4 Hrs.]

[TOTAL: 12 Hours]

MODULE - IV NATURAL RESOURCE AND DEGRADATION

- Land use, degradation - soil erosion, unsustainable agriculture practices, chemical degradation, physical degradation, consequence, measures to check degradation. [4 Hrs.]
- Forest – as a resource, benefits, products, strain on forest resource and economic development. deforestation – extent, causes effects, measures for afforestation – community projects. [4 Hrs.]
- Bio-diversity – loss, extent, development of bio-diversity relationship. Measures preserving bio-diversity – National parks, Sanctuaries. [4 Hrs.]

[TOTAL: 12 Hours]

MODULE V NATURAL RESOURCE AND POLLUTION

- Water resource balance; source ground and surface, problem. Water pollution – sources, consequences; Development and Water resource management. [3 Hrs.]
- Energy – needs, source, environmental pollution, multi-purpose projects, energy crisis – policy, alternative sources of energy. [3 Hrs.]
- Wastes – problem of waste, nature as a source. Types – bio-degradation and non – bio degradable, poisonous, radio-active waste, Case of pesticides, Waste management. [3 Hrs.]
- Air pollution, Noise pollution extent causes, effects, remedies. [3 Hrs.]

[TOTAL: 12 Hours]

READING LIST:

1. Bhattacharya N, Rabindra (2001) *Environmental Economics - An Indian Perspective*. Oxford University Press, Delhi.
2. Sankar Ulaganathan (2001), *Environmental economics*, Oxford University Press, Delhi.
3. Sengupta, Ramprasad (2001), *Ecology and Economics - An approach to Sustainable Development*, Oxford University Press, Delhi.
4. Kolstad D Charles, (2000) *Environmental economics* Oxford University Press, Delhi.
5. *Our Common future* (1987) *World commission on Environment & Development*, Oxford University Press.
6. *Compendium of Environment Statistic* (1998), C.S.O., Govt of India.
7. Folmero J Gabel H L (2000) *Principles of Environmental and Resource Economics*, Edward Elgar Publications, London.
8. Hill (1995), *Understanding Environmental Pollution*, Cambridge University Press, London
9. Opschoor, (1999) *Environmental economics and Development*, Edward Elgan, London.
10. Pendlston, Graftar, *Dictionary of Environmental and Ecological Economics*

VI-SEMESTER
INDIAN ECONOMY- II : PAPER- 6.1 (PART-B)
(Compulsory paper)

COURSE OBJECTIVES :

- *To enable a student to have an overview of the working of the Indian economy.*
- *To enable a student to understand the changing trends in the Indian economy.*
- *To enable a student to understand the leading issues in India's economic development*

MODULE I FINANCIAL MARKETS

- Features of the Indian money market [1 Hr.]
- Unorganized sector. [1 Hr.]
- Critical review of the performance of nationalisation of commercial banks. [3 Hrs.]
- Monetary policy of the R.B.I. [2 Hrs.]
- Post – 1991 banking reforms. [3 Hrs.]
- I.D.B.I. (1) S.E.B.I [1 Hr.]

[TOTAL: 12 Hours]**MODULE - II FOREIGN TRADE**

- Changing structure of Indian exports and imports since independence. [2 Hrs.]
- Causes for disequilibrium in India's balance of payments. [2 Hrs.]
- Trade policy of the Govt. of India since 1991. [3 Hrs.]
- Impact of W.T.O. on India's foreign trade tariffs, subsidies and globalization. [5 Hrs.]

[TOTAL: 12 Hours]**MODULE - III GOVERNMENT FINANCE**

- Growth of public expenditure. [1 hr.]
- Source of revenue for the Union Budget – problems of India's tax system [2 Hrs.]
- Deficit financing – Trends and consequences [2 Hrs.]
- Federal Finance – divisions of resources, problems, review of the recommendations of the recent finance commission – Eleventh Finance Commission – Evaluation of India's fiscal policy. [1 Hr.]
- Parallel economy – causes, impact, remedies. [2 Hrs.]

[TOTAL: 12 Hours]**MODULE - IV KARNATAKA ECONOMY**

- Overview of Karnataka Economy – G.D.P., P.C.I. growth rate, H.D.I [1Hr.]
- Natural resources – land wise pattern, forest water, mineral resources [2Hrs]
- Population dynamics – growth, composition, density, problems [2 Hrs.]
- Agricultural development in Karnataka, trends in agricultural production. Problems of agriculture in Karnataka [2 Hrs.]

[TOTAL: 12 Hours]**MODULE IV KARNATAKA ECONOMY**

- Land holding, irrigation, finance and marketing. [3 Hrs.]
- Sericulture in Karnataka – growth, problems, projects. [2 Hrs.]

[TOTAL: 12 Hours]**MODULE V KARNATAKA ECONOMY**

- Recent industrial policy of the Govt. of Karnataka. [2 Hrs.]
- Small scale industry – growth and problems. [2 Hrs.]
- Information technology (I.T) Industry in Karnataka – role and growth. [1 Hr.]
- Energy sector – growth and problems. [2 Hrs.]
- Karnataka finances – sources and problems [2 Hrs.]
- Tenth five year plan. [1 Hr.]
- Regional imbalance in Karnataka – indicators – social and economic, causes and remedies. [2 hrs.]

[TOTAL: 12 Hours]**READING LIST**

- 1) Alak G - *Indian Economy, Its nature and problems*
- 2) Rudhra datt - *Indian Economy*

- 3) Dhingra I.C. - *The Indian Economy*
- 4) Misra SK and V.K. Puri - *Indian Economy Its Development Experience*
- 5) Uma Kapila - *An overview of Indian Economics - volume I - IV*
- 6) Govt. of Karnataka - *Economic Survey (Latest year)*
- 7) Govt. of Karnataka - *Karnataka at Glance*
- 8) O.D. Heggade - *Karnataka Economy, Kannada*
- 9) D. T. Nanje Gowda - *Karnataka Economy (IEA) Conference*

VI - SEMESTER

DEVELOPMENT ECONOMICS-II : PAPER 6.2 (A) (PART - B) (Optional paper)

COURSE OBJECTIVES :

- To enable a student to learn the fundamental concepts of Development economics.
- To enable a student to relate learning to reality in case of development issues like poverty, technology, and human resource development etc.
- To enable a student to develop a logical and analytical view of issues in today's world.

MODULE - I THEORIES AND STRATEGIES OF DEVELOPMENT

- Adam Smith [2 Hrs.]
 - Karl Marx [3 Hrs.]
 - Rostow [3 Hrs.]
 - Big push theory [2 Hrs.]
 - Critical minimum effort [2 Hrs.]
 - Strategies of development – balanced growth and unbalanced growth [4 Hrs.]
- [TOTAL: 16 Hours]**

MODULE - II STATE AND DEVELOPMENT

- Role of planning in economic development [1 Hr.]
 - Types of planning (at conceptual level), direction, inducement, physical, financial, regional, national, short-term, long-term, rolling, decentralized planning [5 Hrs.]
 - Macro economic policies for development – monetary and fiscal policies in economic development [4 Hrs.]
 - Regional imbalances – indicators, causes and remedies. [2 Hrs.]
- [TOTAL: 12 Hours]**

MODULE - III SECTORAL VIEW OF DEVELOPMENT

- Role of agriculture in economic development. [2 Hrs.]
 - Role of industry in economic development [2 Hrs.]
 - Role of service sector in economic development (an overview) [2 Hrs.]
 - Role of Infrastructure in economic development [2 Hrs.]
 - Transportation and communication sectoral planning [2 Hr.]
- [TOTAL: 10 Hours]**

MODULE - IV POVERTY AND INEQUALITY

- Poverty – absolute and relative poverty [2 Hrs.]
 - Measurement of poverty – Lorenz curve [3 Hrs.]
 - A. K. Sen's capability building thesis [1 Hr.]
 - Economic inequality between developed and developing countries [2 Hrs.]
 - Gender inequality – meaning [2 Hrs.]
- [TOTAL: 10 Hours]**

MODULE - V INTERNATIONAL ASPECT OF DEVELOPMENT

- Role of foreign trade in economic development [2 Hrs.]
 - Secular deterioration in terms of trade for developing nations [3 Hrs.]
 - Inward looking and outward looking strategy (domestic & foreign) Globalization – pros and cons for developing nations [3 Hrs.]
 - MNC's – role and spread [1Hr.]
 - World Bank and economic development [1 Hr.]
- [TOTAL: 11 Hours]**

READING LIST:

- 1) Ray Debraj - *Development Economics*
- 2) Hent Diana - *Economic theories of Development – An analysis of competing paradigm*
- 3) Gerald M Meier - *Leading issues in Economic Development*
- 4) Meier and Baldwin - *Economic Development*
- 5) Higgins B - *Economic Development Past and Present*
- 6) Todaro P Micheal - *Economic Development*
- 7) Lekhi - *Development Economics*
- 8) M.L. Jhingan - *Economics of Development and planning*
- 9) Mishra and Puri - *Economics of Development and planning*
- 10) Das Debendra K - *Globalisation and Development – Experience and Challenges*. Deep and Deep Publication
- 11) Sen Gupta Ramprasad - *Ecology and Economics*, Oxford University Press
- 12) World Bank Reports - Various issues
- 13) Human Development - Various issues
- 14) Asian Development - Various issues

VI- SEMESTER**ECONOMIC DOCTRINES-II : PAPER - 6.2 (B) (PART – B)
(Optional Paper)****COURSE OBJECTIVES:**

- To enable a student to understand the rich contributions of eminent thinkers to economic thought.
- To enable a student to understand the evolution of economic ideas over time.
- To enable a student to understand the importance of the economic ideas as developed by various thinkers.

MODULE – I KEYNESIAN SCHOOL

- Emergence of new economics [2 Hrs.]
- Keynes departure from classicism [3 Hrs.]
- Keynesian concept – consumption and investment function, effective demand [3 Hrs.]
- Post –Keynes – Schumpeter [2 Hrs.]
- Gunnar Myrdal [2 Hrs.]

[TOTAL: 12 Hours]**MODULE – II WELFARE SCHOOL**

- Pareto [1 Hr.]
- Hobson [1 Hr.]
- Pigou [2 Hrs.]
- J.R. Hicks [2 Hrs.]
- Kenneth K Arrow [2 Hrs.]
- Amartya Sen [2 Hrs.]

[TOTAL: 10 Hours]**MODULE – III GROWTH SCHOOL**

- Rosenstein-Rodan [2 Hrs.]
- Nurkse [2 Hrs.]
- Hirschman [2 Hrs.]
- Rostow [2 Hrs.]
- Leibenstein [2 Hrs.]

[TOTAL : 10 Hours]**MODULE – IV INDIAN ECONOMIC THOUGHT**

- Kautilya [1 Hr.]
- Dadabhai Naoroji [1 Hr.]
- R.C. Dutt [1 Hr.]
- Mahatma Gandhi [3 Hrs.]

- J.K. Mehta [2 Hrs.]
- C.N. Vakil [2 Hrs.]
- D.R. Gadgil [2 Hrs.]
- Nehru [2 Hrs.]
- P.R. Brahmananda [2 Hrs.]

[TOTAL : 16 Hours]

MODULE -V NOBEL ECONOMISTS

- Jan Tinbergen [2 Hrs.]
- Ragnar Frisch [2 Hrs.]
- Paul A. Samuelson [2 Hrs.]
- Milton Friedman [2 Hrs.]
- Simon Kuznets [2 Hrs.]
- W.W. Leontief [2 Hrs.]

[TOTAL: 12 Hours]

READING LIST:

1. Alexander Gray, *The Development of Economic Doctrines*
2. Arthur Mource, *Early Economic Thought*
3. Edmand Whittaker, *Schools and Streams of Economic thought*
4. Ganguly, *Indian Economic Thought*
5. Guidy and Rist, *A History of Economic Doctrines*
6. Hajela T.N., *History of Economic Thought*
7. Hancy I..H., *History of Economic Thought*
8. Lekachaman R, *A History of Economic Ideas*
9. Mc Connel J.W., *Ideas of Great Economists*
10. Puttaswamaiah, *Nobel Economists*
11. Spiegel H.W., *The Development of Economic Thought*
12. William J Barber, *A History of Economic Thought*

VI - SEMESTER**ENVIRONMENTAL ECONOMICS- II : PAPER – 6.2 (C) (PART-B)
(Optional Paper)****COURSE OBJECTIVES:**

- To build a student's knowledge of the conceptual and theoretical foundation of environmental economics as a special branch of economics.
- To appraise a student with emerging environmental issues and policies at national and international levels.

MODULE-I SUSTAINABLE DEVELOPMENT

- Concept, definition, approaches – Hardwick, London School, safe minimum approach, Daly's operational principles [3 Hrs]
- Indications, goal, requirements and obstacles to sustainable development [3 Hrs.]
- Sustainable Vs conventional development. Economics of re-cycling, sustainable agriculture [3 Hrs.]
- Policy approach to sustainable development: political economy of sustainable development. Techno-centric, Eco-centric solution to sustainable development [3 Hrs.]

[TOTAL: 12 HOURS]

MODULE-II POPULATION AND ENVIRONMENT

- Population growth of species, human population theory of demographic transition, growth, density, migration industrialization, pollution, waste. [5 Hrs.]
- Development of technology for population support, food security, ecology of the poor, affluent [5 Hrs.]
- Gender and environment [2 Hrs.]

[TOTAL: 12 HOURS]**MODULE – III ENVIRONMENTAL VALUATION AND POLICY INSTRUMENTS**

- Need for environmental valuation – Methods Direct – contingent valuation – Indirect – averting behaviour approach, weak complementary approach, and Hedonic approach. Applications of approaches and policy instruments. [4 Hrs.]
- Direct – pollution taxes, charges, and emission trading rights, deposit refund systems, performance bond, and strict liability for pollution. [3 Hrs.]
- Indirect – taxes on outputs of inputs of polluting activities, accelerated depreciation allowance, subsidies for adopting cleaner technologies, effluent treatment plants, eco-certification of products, environmental audit.
- Wide effects of environmental regulations [5 Hrs.]

[TOTAL: 12 HOURS]**MODULE – IV ENVIRONMENT ISSUES**

- International environmental issues – pollution issues – global warming, acid rain, ozone depletion, desertification – causes, effects [3 Hrs.]
- Ecological issues – tropical rain forests, endangered species. [2 Hrs.]
- International trade issues – domestic environment policy. [2 Hrs.]
- Cost of production, exportable. International co-operation. National issues – case studies, development and environmental issues
- Upper Krishna Project – Narmada River Valley Project – National Parks, Sanctuaries, Project Tiger, Tanneries, Quarries. [5 Hrs.]

[TOTAL: 12 HOURS]**MODULE – V ENVIRONMENTAL POLICY IN INDIA**

- Ministry of Environment and Forest, Govt. of India – Role, Environmental Legislation in India, Central Pollution Control Board [3 Hrs.]
- State Pollution Control Board – role, function, a brief review of Water Cess Act 1977, Forest Conservation Act, 1980, Wildlife Protection Act, 1972, National Policy for Conservation of Forest and Wildlife. Motor Vehicle Act, 1988. Water Prevention and Pollution Control Act 1974 as amended in 1988. Environment Protection Act, 1986. Hazardous Waste Management Rules, 1989, Bio Medical Waste Management Rules, 1989, Plastic Waste Rules 2001 (State) [5 Hrs.]
- Collective action, Role of NGO's, Environment education and awareness. [4 Hrs.]

[TOTAL: 12 HOURS]**READING LIST:**

1. Alexander Gray, *The Development of Economic Doctrines*
2. Arthur Mource, *Early Economic Thought*
3. Edmand Wittaker, *Schools and Streams of Economic thought*
4. Ganguly, *Indian Economic Thought*
5. Guidy and Rist, *A History of Economic Doctrines*
6. Hajela T.N., *History of Economic Thought*
7. Hancy L.H., *History of Economic Thought*
8. Lekachaman R, *A History of Economic Ideus*
9. Mc Connel J.W., *Ideas of Great Economists*
10. Puttaswamaiah, *Nobel Economists*
11. Spiegel H.W., *The Development of Economic Thought*
12. William J Barber, *A History of Economic Thought*

Revised Syllabus-2007

FIRST SEMESTER PAPER – 1

HISTORY OF INDIA – 1

UNIT-I: - Introduction- Survey of Sources, Modern writings on Ancient India (Max Muller, James Mill, K.P.Jayaswal, D.D.Kosambi). Influence of Geography on History, Harappan Civilization – Urban Civilization – Society and Religion – Trade contacts – Recent Excavations - Arya – Dravida Debate.

UNIT-II :- Vedic Period: Early Vedic Period – Pastoral Society – Assemblies – Priest and Rajanya – The Eastward Movement – Kingship and Paramountcy – Emergence of a stratified society – Varna and Jati – Vedic Literature –Religion –Women - Kushanas.

UNIT-III :- Movements of Dissent and Protest –Jainism and Buddhism – Legacy - Mauryas – Kautilya - Ashoka and his Dharma – State and Economy - Art and Architecture.

UNIT-IV :- Gupta and Post-Gupta Periods – Administration – Society- Literature – Science And Technology – Religious Revival –Art and Architecture –Urbanization -Agrarian structure in Post-Gupta Period- Vardhanas- Cultural Contributions.

UNIT-V: - The South: The Sangam Society and Culture – Pallavas - Religion - Alvars, Nayanmars – (Mahendravarma, Narasimhavarma) – Art and Architecture – The Cholas (Rajaraja Chola, Rajendra Chola I), Chola administration – Art and Architecture.

MAPS: (Locate any 10 centres only)

1. Harappan sites
2. Religious Centres(Jaina and Buddhist)
3. Sites of Trade and Commercial Importance.

PLACES OF HISTORICAL IMPORTANCE:

(Locate and mention their Historical importance)

1)Harappa 2)Ujjain 3)Lothal 4)Bodhgaya 5)Sarnath 6)Pataliputra 7)Taxila 8)Prayag
9)Sanchi 10)Purushapura 11)Nalanda 12)Broach 13)Maski 14)Kanauj 15)Sopara
16) Kaveripattinam 17)Ajanta 18)Kancheepuram 19)Mahabalipuram 20)Tanjavur

Books for study and reference:

1. R. C. Majumdar et. al . : Advanced History and India.
2. D. D. Kosambi :An Introduction to Indian History.
3. Romila Thapar : Ancient India .
4. Romila Thapar : Ancient Indian History .
5. R. S. Sharma : Indian Feudalism .
6. R. S. Sharma : History of Indian Political Ideas and Institutions.
7. A. S. Altekar : State and Government in Ancient India .

8. U. N. Goshal :History of Indian Political Ideas.
9. R. G. Bhandarkar : Political Ideology in Ancient India .
10. R. G. Bhandarkar : Early History of Deccan (Two Vols .).
11. K. A. Nilakanta Sastry :A History of South India .
12. A. L. Bhasyam :The Wonder that was India .
13. Sadananda Kanavalli (tra.): Bharathada Itihasa .
14. H. V. Srinivasa Murthy :History and Culture of South India to 1000 A.D.
15. N. Subramaniam :Sangam Polity .

ಹಿನ್ನೆಲೆ ಅಪ್ ಇಂಡಿಯ - 1

1. ಆರ್. ಸಿ. ಮುಖಂದಾರ್ ಮತ್ತು ಇತರರು(ಅನುವಾದ) ಭಾರತದ ಫ್ರೆಡ್ ಇತಿಹಾಸ
ಎಚ್. ವೈ. ಶಾರದಾಪ್ರಸಾದ್, ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾಲಯಪ್ರಕಟಿತ
2. ಶಿವರುದ್ರಸ್ವಾಮಿ ಎನ್. ಎನ್. ಭಾರತದ ಇತಿಹಾಸ (ಆರಂಭದಿಂದ 1200 ರ ವರೆಗೆ)
3. ಜಿ. ಆರ್. ರಂಗಸ್ವಾಮಯ್ಯ ಪ್ರಾಚೀನ ಭಾರತ
4. ಎನ್. ಪಿ. ಶಂಕರನಾರಾಯಣರಾವ್ ಪ್ರಾಚೀನ ಭಾರತ

SECOND SEMESTER PAPER – II

HISTORY OF INDIA FROM 1206-1707AD

UNIT-I: - Survey of Sources – Brief Introduction to Advent of Islam – The Sultanate Foundation, Illutmish, Razia Begum, Balban - Administrative structure –Turkish nobility and the Ulema – Influence of Persian Culture.

UNIT-II:- The Khiljis – Allauddin Khilji -Administration & Economic Reforms – Tughlaqs- Political and Economic Experiments of Mohammed Bin Tughluq- Feroz Shah Tugluq's Economic Measures.

UNIT-III:- The Mughuls – Foundation – Shershah's Administration – Consolidation under Akbar – The Rajputs – Akbar's Rajput Policy – Religious Policy – Administrative Structure – Mansabdari System – Aurangzeb's Deccan Policy – Decline of the Mughal Empire.

UNIT-IV:- Society, Culture, Economy under the Mughals, Emergence of New Social Classes – Status of Women – Emergence of a Composite Culture – Bhakti and Sufi Movements(Mira, Chaitanya, Kabir, Nanak, Ramananda, Ramdas, Moin-ud-din Chisti) – Architecture and Fine Arts under the Mughals – Mughal Economy – Trade and Commerce.

UNIT-V:- Rise of Marathas – Shivaji – Administration.

MAPS: (Locate any 10 Centres only)

1. Mughal Architectural Centres,
2. Trade and Commercial Centres
3. Extent of Shivaji's Empire

PLACES OF HISTORICAL IMPORTANCE:

(Locate and Mention their Historical importance)

- 1)Delhi 2)Devagiri 3) Ajmer 4) Dwarasamudra 5)Agra 6) Surat 7) Panipet 8)Rameshwaram
9) Shivaner 10)Poona 11) Ahmednagar 12) Fatehpur Sikri 13) Chittor 14) Sasaram
15) Amritsar 16) Khandesh 17)Mathura 18) Ranthambor 19)Bijapur 20) Jinjee

Books for study and reference:

1. Iswari Prasad : Medieval India .
2. Mohd. Habib & K.A. Nizami : Comprehensive History of India . Vol. V & VI .
3. A. L. Srivastava : Sultanate of Delhi .
4. Tapan Ray Chaudhri & Irfan Habib : Cambridge Economic History of India Vol. 1.
5. R. C. Majumdar : The Mughal Age.
6. R. S. Tripathi : Decline & Fall of Mughal Empire .
7. J. N. Sarkar : The Mughal Administration .
8. Mohd. Habeeb : Medieval History of India .
9. Moreland : India from Akbar to Aurangzeb .
10. Jadunath Sarkar : The Maratha Polity .
11. Dr. Shivanna : Madyakaleena Bharathada Arthica Ithihasa .
12. T. V. Mahalingam : Administration & Social Life Under Vijayanagar 2Vols.
13. B. N. Luniya : Evolution of Indian Culture.
14. Irfan Habib : Agrarian System in Mughal India .
15. I. H. Qureshi : The Sulthanate of Delhi .
16. T. V. Mahalingam : South Indian Polity .

ಹಿನ್ನೆರೆ ಆಪ್ ಇಂದಿಯ - 2

- | | |
|--|-------------------------------------|
| 1. ಶಿವಣ್ಣ | ಮಧ್ಯಕಾಲೀನ ಭಾರತದ ಅರ್ಥಿಕ ಇತಿಹಾಸ |
| 2. ಎ. ವಿ. ನರಸಿಂಹಮೂರ್ತಿ ಮತ್ತು ಇತರರು(ಅನುವಾದ) | ಭಾರತೀಯ ವಿದ್ಯಾಭವನದ ಸಂಪುಟಗಳು |
| 3. ಶಿವರುದ್ರಸ್ವಾಮಿ ಎಸ್. ಎಸ್. | ಭಾರತದ ಇತಿಹಾಸ (ಕ್ರಿ. ಶ. 1200 - 1761) |
| 4. ಪ್ರಧಾನ ಗುರುದತ್ (ಅನುವಾದ) | ಭಾರತೀಯ ಸಮಾಜದ ಐತಿಹಾಸಿಕ ವಿಶ್ಲೇಷಣೆ |
| 5. ಎಚ್. ಎಸ್. ಗೋಪಾಲರಾವ್ | ಭಾರತೀಯ ಬಹುಮುಖಿ ಸಂಸ್ಕೃತಿ |

THIRD SEMESTER PAPER - III**KARNATAKA - SOCIETY, ECONOMY AND CULTURE.**

UNIT-I: - Introduction - The Satavahanas - The Formation of States, Society- Agrarian Structure (Feudalism), Kadambas - Land Grants - Emergence of Agraharas - Educational System- Chalukyas - Guild System (Aihole 500)

UNIT-II :- Vijayanagara - Society (Caste System and Status of Women), State Income(Agriculture, Industrial and Irrigation Taxes) Trade Contacts - Guilds(Craft Guilds and Merchant Guilds) State

Income And Trade Contacts of Shahis (Bahamanis, Adil Shahis) Keladi Revenue Policy- Tippu's Economic Innovations.

UNIT-III:- Religion and Philosophy - Impact of Janism - New Religious Sects (Advaita, Dwaita, Vishistadvaita, Kalamukha and Shakta Cults) Virashaivism - Haridasa Movement, Sufism - Christianity and its Impact.

UNIT- IV:- Literature: Literary Contributions - Pampa - Basava - Akkamahadevi - Purandaradasa - Kanakadasa - Kuvempu - Bendre, Architecture - Chalukyas of Badami, Hoysalas, Vijayanagara and Bahamani and Adil Shahi Styles.

UNIT- V: - Impact of the West - Nationalism- Freedom Movement- Unification of Karnataka.

Contemporary Issues:

1. Politics of Assertion and Social Justice(Backward Class Movement, Dalit Movement and
2. Progressive Movement, Gokak 'Chaluvali', Raitha Sangha)
3. Border Dispute (Mahajan Commission).
4. River - Water Dispute.

MAPS: (Locate any 10 centres only)

1. Centres of Religious Importance.
2. Centres of Art & Architecture.
3. Centres of Freedom Struggle.

PLACES OF HISTORICAL IMPORTANCE:

(Locate and Mention their Historical importance)

- 1) Pratihthana 2) Banavasi 3) Nagavi 4) Badami. 5) Aihole 6) Belur 7) Halebidu
- 8) Hampi. 9) Keladi 10) Bidar 11) Bijapur 12) Srirangapatna 13) Mysore 14) Bangalore
- 15) Isur 16) Vidurashwatha 17) Shivapur 18) Belgaum 19) Kittur 20) Belligave

Books for study and reference:

1. R. R. Diwakar, (Ed.) : Karnataka Through the Ages .
2. R. R. Diwakar, (Ed.) : Karnataka Parampare (Kannada) 2 Vols.
3. H. Tipperudraswamy : Karnataka Samskrthi Sameekshe (Kannada).
4. Shamba Joshi : Karnataka Samskruthiya Poorva Peetike .
5. A. S. Altekar : Rastrakutas and Their Times.
6. M. Chidananda Murthy : Kannada Shasanagala Samskrutika Adhyayana (Kannada).
7. G. M. Moraes : The Kadamba Kula.
8. M. V. Krishna Rao : The Gangas of Talakad.
9. C. Hayavadana Rao : History of Mysore 3 Vols.
10. K. Raghavendra Rao : Imaging The Unimaginable.
11. S. Chandrashekar : Adhunka Karnatakada Andolanagalu (Kannada).
12. S. Chandrashekar : Sahitya Mathu Charitre (Kannada).
13. Suryanatha U. Kamath : Karnatakada Sanskshipta Itihasa.
14. D. V. Gundappa : Jnapaka Chitrashale.
15. S. Rajashekara : Karnataka Art & Architecture.
16. K R. Basaraja : History and Culture of Karnataka

ಕರ್ನಾಟಕ - ಸಮಾಜ, ಆರ್ಥಿಕ ಮತ್ತು ಸಂಸ್ಕೃತಿ

ಬಿ. ಷೇಕ್ ಅಲಿ, ಪ್ರಧಾನ ಸಂಪಾದಕರು

ಕರ್ನಾಟಕ ಇತಿಹಾಸ - ಏಳು ಸಂಪುಟಗಳು

ಡಾ || ಶಿವರುದ್ರಸ್ವಾಮಿ ಎಸ್. ಎನ್.

ಕರ್ನಾಟಕದ ಫಲಿಡ ಇತಿಹಾಸ ಮತ್ತು ಸಂಸ್ಕೃತಿ

ಡಾ || ಆರ್ ರಾಮಕೃಷ್ಣನ್ ಮತ್ತು

ಕರ್ನಾಟಕದ ಚರಿತ್ರೆ

ಡಾ || ಹೆಚ್. ವಿ. ಶ್ರೀನಿವಾಸ ಮೂರ್ತಿ

FOURTH SEMESTER PAPER – IV**HISTORY AND TOURISM IN INDIA**

UNIT – I: Introduction – Study of Tourism – History as a Tourism Product – Types of Tourism – Tourism Through the Ages – Beginnings to the Medieval Times – Modern Tourism – Sargent Committee.

UNIT – II: Tourism Development – Basic Infrastructure – Supportive Services – Tourism Planning and Policy – Tourism and Environment – Towards Sustainable Tourism – Conservation of Cultural Heritage and Resources – Protection of Ancient Monuments Act – Museum Act.

UNIT – III: Tourism Organization – International, National and Regional – IAOTO, WTO and PATA; Strengthening Indian Tourism Industry – Impact of Tourism - ITDC, KSTDC; Role of Travel Agencies – Tourism Marketing and Management – Training Personnel for Tourism.

UNIT – IV: Tourism and Karnataka – Historical Sites, World Heritage Sites – Hampi and Pattadakal Monuments – Beach Resorts and Adventure Tourism in Karnataka.

MAPS: (Locate any 10 Centres only)

1. Heritage Sites in India.
2. Wild Life Sanctuaries.
3. Tourism Circuits in Karnataka.

PLACES OF IMPORTANCE:**(Locate and Mention their importance)**

- 1)Allahabad 2)Nandi 3)Bandipura 4)Dandeli 5)Taxila 6)Prayag 7)Kasi 8)Ajantha
9)Ellora 10)Hampi 11)Ramanagara 12)Aihole 13)Pattadakallu 14)Delhi 15)Fatehpur Sikri
16)Konark 17)Khajuraho 18)Simla 19)Darjeeling 20)Jaipur 21)Panaji 22)Mount Abu.

Books for study and reference:

1. G.S. Batra – Tourism in the 21st Century
2. G.S. Batra & Dangwal R.C – Tourism Promotion and Development.

3. Brijendra Punic – Tourism Management, Problems and Prospects
4. Deams Foster – An Introduction to Travel and Tourism
5. Donald Lund berg E & Carolyn Lund berg – Interwal, Travel and Tourism
6. Gupta T.C. Sushma Kashekar – Tourism Products in India

ಭಾರತದ ಇತಿಹಾಸ ಮತ್ತು ಪ್ರವಾಸೋದ್ಯಮ

- | | |
|-------------------------------|--------------------------------|
| 1. ಶಿವರುದ್ರಸ್ವಾಮಿ ಎಸ್. ಎಸ್. | ಭಾರತೀಯ ಪ್ರವಾಸೋದ್ಯಮ |
| 2. ಡಾ ಬಿ ಆರ್ ಪರೀಣೀತ | ಭಾರತದ ಇತಿಹಾಸ ಮತ್ತು ಪ್ರವಾಸೋದ್ಯಮ |
| 3. ಡಾ ಕೆ. ಎಸ್. ವಿಜಯಲಕ್ಷ್ಮಿ | ಇತಿಹಾಸ ಮತ್ತು ಪ್ರವಾಸೋದ್ಯಮ |

FIFTH SEMESTER PAPER – V

HISTORY OF MODERN INDIA

UNIT-I: - Introduction – Entry of European Companies and their Impact on Indian Polity – Growth of Mercantilism – Wars and Consolidation of the British Empire (Plassey, Buxar, Carnatic) – 1857 Revolt.

UNIT - II: - British Land Revenue Mechanism – (Permanent Settlement – Ryotwari – Mahalwari Systems) – Commercialization of Agriculture – Rural Indebtedness – Famines – Tariff Policy – Economic Nationalism and Drain Theory.

UNIT - III :- The Debate Over English Education – The Socio – Religious Reform Movements– Pan –Islamic Movement –Rise & Growth and Nationalism- Indian National Congress – The Early Phase – Gokhale- Tilak – Muslim League – Entry of Gandhi and Mass Mobilization – Non Co-operation Movement – Simon Commission – Civil Disobedience Movement – Ambedkar and Poona Pact.

UNIT - IV: - Towards Freedom – The Left Movement – Labour and Peasant Movements – II World war and Quit India Movement – Communalism – Mount Batten Plan – Partition and Independence – Integration of Princely States.

MAPS: (Locate any 10 centres only)

1. Early European Settlements.
2. Places Connected with 1857 Movement.
3. Places connected with Indian National Movement.

PLACES OF HISTORICAL IMPORTANCE:

(Locate and Mention their Historical importance)

- 1)Calicut 2)Calcutta 3)Plassey 4)Buxar 5)Champaran 6)Madras 7)Mahe 8)Surat
9)Pondicherry 10)Goa 11)Jhansi 12)Chauri Chaura 13)Murshidabad 14)Chandranagore

15)Lahore 16)Amritsar 17)Dandi 18)Naokhali 19)Mahad 20)Belgaum

Books for study and reference:

1. Sumith Sarkar : Modern India.
2. Percival Spear : Modern India.
3. A. R. Desai : Social Background of Indian Nationalism.
4. J. P. Andrews : The Renaissance in India.
5. C. Y. Chinthamani : Indian Politics Since The Mutiny.
6. Annie Besant : India A Nation.
7. R.C. Majumdar : History of Political Thought From Ram Mohan To Dayananda.
8. Bipan Chandra &Et.al. Indian Struggle for Independence.
9. Bipan Chandra : Freedom Struggle (NCERT)
10. Bipan Chandra, Barunde & Amallesh Tripathi : Modern India (NCERT).
11. Raj Mohan Gandhi : The Good Boat Man.
12. Jawaharlal Nehru : Discovery of India.
13. Ravindra Kumar : Essays on the Social History of Modern India.

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FIFTH SEMESTER PAPER – VI (A)

HISTORY OF EUROPE 1500-1945

UNIT –I: - Industrial Revolution and its Impact – Rise of Capitalism and Socialism – Karl Marx – Enlightened Monarchy- A brief Overview

UNIT – II:- French Revolution – Crisis of the Old Regime – Intellectual Currents - Participation of Social Classes – Napoleon Bonaparte – Continental System – Reforms – Congress of Vienna 1815 –Growth of Liberalism and Socialism

UNIT -III:- Nationalism and Movements for Unification – Italy and Germany – Bismarck – Diplomacy and System of Alliances – Eastern Question – Power Blocs – First World War – Russian Revolution

UNIT- IV: Europe between 1919 – 1939 - Peace Settlements- Versailles- The Great Depression and Economic Recovery- Fascism and Nazism - Factors leading to Second World War and Impact of the War.

MAPS: (Locate any 10 centres only)

1. Centres of Industrial and French Revolution.
2. Centres Unification Movements - Italy and Germany.

3. Theatres of World Wars 1 and II.

PLACES OF HISTORICAL IMPORTANCE

(Locate and Mention their Historical importance)

- 1)Frankfurt 2)Rome 3)Turin 4)Naples 5)Milan 6)Leningrad 7)Paris 8)Berlin 9)Dunkirk
10)Vienna 11)Waterloo 12)Versailles 13)Leipzig 14)Moscow 15)London 16)Piedmont
17) Aixla Chapelle 18) Yalta 19) Potsdam 20) Munich.

Books for study and reference:

1. J.A.R Marriott: A History of Europe.
2. J.M.Thompson: The French Revolution.
3. Eric Hobsbawn: The Age of Empire 1875-1914.
4. Eric Hobsbawn: The Age of Extremes.
5. Eric Hobsbawn: A History of the World 1914-1921.
6. Eric Hobsbawn: The Age of Captial 1848-1875.
7. Eric Hobsbawn: The Age of Revolution 1789-1875.
8. Bimal Chakraborty: The United Nations and the Third World-Shifting Paradigms.
9. T.K.Derry: The United Kingdom.
10. C.D.M.Ketelbey: A History of Europe in Modern Times from 1789.
11. C.D.M.Ketelbey: A Short History of Modern Europe.
12. J.R.Hale: Renaissance Europe 1480-1520.
13. C.J.H.Hayes: Contemporary World from 1870.
14. A.J.Grant: Europe in the Last Five Centuries.
15. Grant and Others: Europe in the Nineteenth and Twentieth Centuries.
16. J.E.Swain: A History of World Civilization.
17. H.K.Smith: The State of Europe.
18. John Lukacs: A History of the Cold War.
19. A.Dayal: A Text Book of Modern Europe.
20. D.Thomson: Europe since Napolean.

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ಘಟಪಾಡಿ ಜಿ ಎನ್. - ಆಧುನಿಕ ಯೂರೋಪ್ (ಅನುವಾದ ಹೇಸನ್)

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FIFTH SEMESTER PAPER – VI (B)

HISTORY OF CHINA AND JAPAN SINCE 1900

UNIT – I: Introduction – Transition to Modernity – European Intervention in China and Japan – Sino-Japanese War 1894-95 – Rise of Nationalism (Taiping Rebellion, 100 Days Reform, Boxer Rebellion, Open Door Policy – Constitutional Reforms of 1904) – Revolution of 1911 – Causes and Results – Phantom Republic.

UNIT – II:- Rise of Kuomintang Party – Dr. Sun-Yat-Sen and the Three Principles- Chiang-kai Shek and Nationalist China – Origin and Growth of Communist Party – Mao-Tse-Tung- Civil War in China – People's Republic of China – Cultural Revolution of 1966

UNIT – III:- Rise of Nationalism in Japan – Meiji Restoration – Emergence of Japan as a World Power – Anglo-Japanese Alliance 1902 – Russo-Japanese War of 1904-05 – Treaty of Portsmouth.

UNIT – IV: Japanese Imperialism and the First World War – Washington Conference 1921-22 – Militant Nationalism in Japan – Japan and the Second World War – Allied Occupation of Japan – Post War Japan – Treaty of San Francisco.

MAPS: (Locate any 10 centres only)

1. Centres of Western Influence in China.
2. Chinese territories under Japanese Occupation in First World War
3. Japanese Conquests in Asia during Second World War.

PLACES OF HISTORICAL IMPORTANCE:

(Locate and Mention their Historical importance)

- 1)Peking 2)Shensi 3)Manchuria 4)Hong Kong 5)Tokyo 6)Kwangtung 7)Nanking
8)Shantung 9)Hunan 10)Nagasaki 11)Canton 12)Macao 13)Mukden 14)Hiroshima
15)Shanghai 16)Kyoto 17)Kanagawa 18)Port Arthur 19)Formosa 20) Yokohama

BOOKS FOR STUDY: (To be included)

Books for study and reference.

1. Modern Japan – Arthur Tiedmann
2. History of the far East in Modern times – Shivakumar and S. Jain
3. Rise and growth of Modern Japan – M.D. David
4. Rise and growth of Modern China – M.D. David
5. Modern China – D. Nelson Rowee
6. History of Japan – A.K. Mukherjee.
7. History of the Far East – R.K. Manjumdar.
8. History of Modern Japan – R.S. Chaurasia.
9. History of Far East – R.S. Chaurasia.
10. History of Asia – B.V. Rao.
11. Asia and Western Dominance – K.M. Panikkar.
12. The Far East – P.H. Clyde and B.F. Beers.

13. History of Modern China – R.S. Gupta
14. History of the Far East – K.S. Latourthe.
15. Modern Asia – M.N Venkataramanappa
16. History of Asia – Sheik Ali & Muddachari
17. Adhunika Asia – R G Shivanna

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ಬಿ. ಮುದ್ದಾಚಾರಿ -	ಅಧುನಿಕ ಏಷ್ಯ
ಆರ್. ಜಿ ಶಿವಣ್ಣ -	ಅಧುನಿಕ ಚೀನಾ ಮತ್ತು ಜಪಾನ
ಕೆ. ಎನ್. ಶಿವಣ್ಣ -	ಅಧುನಿಕ ಚೀನಾ
ಕೆ. ಎನ್. ಶಿವಣ್ಣ -	ಅಧುನಿಕ ಜಪಾನ

SIXTH SEMESTER PAPER – VII

INDIA AFTER INDEPENDENCE

UNIT – I:- Problems in the New Republic – Integration of Princely States — Center- State Relations – Reorganization of States on Linguistic Bases- An Overview India in the Nehru Era – Economic Planning -Foreign Policy – Non-Alignment – India and her Neighbours (China, Pakistan) – India’s Nuclear Policy

UNIT - II:- Contemporary Politics – Hegemony of the Congress - Parties of the Right – The Left -Socialist and Communist Movements – Indira Gandhi and Emergency – Regional Political Parties (DMK, Akali Dal and Telugu Desam) - Janata Experiment – Rajiv Regime

UNIT – III:- Realignment of Political Forces – Mandal Commission – Minorities and OBC’s – Ambedkarism and Dalit Movement – Politics of Women’s Empowerment.

UNIT - IV:- Religion and Politics – Fundamentalism – Secularism and Communalism – Tools for Communalization of Society – The Cultural Scenario – Educational and Cultural Bodies (NCERT, UGC, ICSSR, ICCR, ICHR) – Environment Movements – Concept of Social Justice in the context of LPG

MAPS: (Locate any 10 centres only)

1. Union Territories and State Capitals of India.
2. Native States in Integrated into Indian Union.
3. Linguistics States created in 1956.

PLACES OF HISTORICAL IMPORTANCE:

(Locate and Mention their Historical importance)

- 1) Srinagar 2)Junagad 3)Hyderabad 4)Mysore 5)Kargil 6)Nathula 7)Sriperambudur
8) Amritsar. 9)Jaipur 10)Simla 11)Bangalore 12)Chennai 13)Sardar Sarovar 14)Puruliya
15) Pokhran 16)Siachen 17)Godra 18)Ayodhya 19)Naxalbari 20)Rai Bareli

Books for study and reference:

1. Baldev Raj Nayar: Globalization & Nationalism – The Changing Balance in India's Economic Policy 1950- 2000.
2. Narendra pani: Inclusive Economics – Gandhian Method and Contemporary Policy.
3. Sangeetha Purushotham: Grassroots Women's Networks and the State.
4. Ajay K Mehra & et.al. (Ed.): Political Parties and Party Systems.
5. Zoya Hasan (Ed.): Politics and the State in India.
6. Peter Ronald de souza: Contemporary India – Transactions.
7. J. N. Dixit: Indian Foreign Policy 1947 – 2003.
8. Puniyani: Communal Politics – Facts and Myths.
9. Sumantra Bose: The Challenge of Kashmir.
10. Bipan Chandra: Ideology and Politics in Modern India.
11. Bipan Chandra et.al.: India after Independence 1947.
12. R.P.Bhalla: Elections in India – Legacy and Vision.
13. Paul R Brass: Politics of India Since Independence.
- 14 Chaudhary D S: Nehru & Nation Building.
- 15 Gore M S: Unity in Diversity: The Indian Experience in Nation Building.

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SIXTH SEMESTER PAPER –VIII (A)

CONTEMPORARY WORLD

UNIT – I:- Post Second World War – UNO – Accomplishments and failures – Challenges before UN – An Evaluation – Bipolar World – Cold War (NATO, Warsaw and regional alliances) – Cuban Missile Crisis

UNIT – II: Non-Alignment – The Third World – National Liberation Movements – South Africa – Crisis in Middle East – Arab-Israeli conflict – North-South Divide & Dialogue (NIEO, Brandt Commission Reports 1980 & 1983, Cancun Summit 1981, 2003, South-South Co-operation 1985 & 1988.

UNIT – III: - Gulf Crisis – Afghan Civil War – Question of Disarmament (NPT, CTBT, WMD) – Terrorism – Decline and fall of Soviet Union – End of Cold War ? – Uni-Polar World – New Global Economic Scenario (WTO, GATT, IMF, World Bank)

UNIT – IV:- New Trends –Ecology and Environment – Contemporary Concerns – The Earth Summit at Rio – Gender Issues and Global Concern – Human Rights – Globalization –Liberalization

MAPS: (Locate any 10 centres only)

1. NATO Countries.
2. Communist Bloc.
3. Non-Aligned Countries.

PLACES OF HISTORICAL IMPORTANCE:

(Locate and Mention their Historical importance)

- 1)Bandung 2)Paris 3)Baghdad 4)Tehran 5)Beirut 6)Moscow 7)Kabul 8)Helsinki
9)Berlin 10)Warsaw 11)Havana 12)Delhi 13)Belgrade 14)Camp David 15)Rio
16) Colombo 17)Tel Aviv 18)Cancun 19)Islamabad

Books for study and reference:

1. Agosin M. (Ed.): Women, Gender and Human Rights: A Global Perspective.
2. Symonides J: New Dimensions and Challenges To Human Rights
3. Lobo Nancy: Globalization, Hindu Nationalism and Christians in India.
4. Went R: Globalization.
5. Vyas V.S. (Ed): Poverty Reduction in Developing Countries.
6. Evans T: Politics of Human Rights.
7. Jogdand & Michael: Globalization and Social Movements.
8. Cohen R: Global Social Movements.
9. Jain and Hexamer: Nuclearization in South Asia.
10. S.K.Ray: Refugees and Human Rights.
11. Bimal Chakraborty : The United Nations and The Third World-Shifting Paradigms.
12. Kathleen C.Bailey(Ed): Weapons of Mass Destruction.
13. Partha S. Ghosh : Co-operation and Conflict In South Asia.
14. A.C.Roy: International Affairs since 1919.
15. A.K. Sen: International Relations since 1919.
16. Praksh Chandra,PremArora: Comparative Politics and International Relations.

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SIXTH SEMESTER PAPER –VIII (B)

HISTORY OF WEST ASIA SINCE 1900

UNIT – I: Introduction – European Interest in West Asia – I World War – Peace Settlements - Turkey – Young Turk Movement – Mustafa Kamal Pasha – The Modernization of Turkey – Post War Turkey.

UNIT – II: - Iraq – Rise of Nationalism – Anglo – Iraq Treaty 1930 –Kuwait War and America - Iran – Reza Shah Pahlavi – Economic Reforms – Post War Politics – The Oil Crisis –Pan –Islamism.

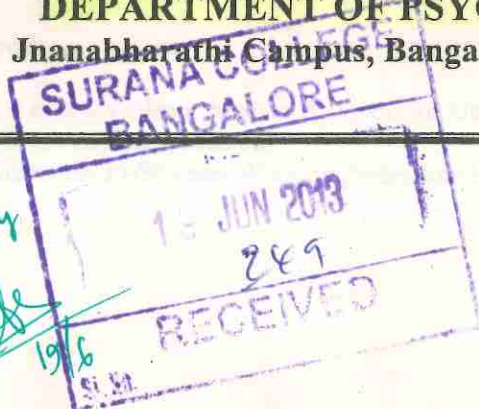
UNIT – III: - Arab Nationalism – I World War and Arab Nations –Mandate System –



BANGALORE UNIVERSITY

SYLLABUS 2012-13

BANGALORE UNIVERSITY
DEPARTMENT OF PSYCHOLOGY
Jnanabharathi Campus, Bangalore - 560 056



CC: Head Prg

Recd on 18/6/13

BASIC PSYCHOLOGICAL PROCESSES

I SEMESTER - BA/B.Sc.

UNIT - I : THE SCIENCE OF PSYCHOLOGY:

12 hours

- a) **Definition and goals of Psychology.**
- b) **Modern perspectives** – Psychodynamic, Behavioral, Cognitive, Evolutionary, Sociocultural, Humanistic Movement and Positive Psychology, Indian Perspective.
- c) **Fields of Psychology.**
- d) **Types of Psychological Research:** Descriptive research (Observation, Survey and Interviews, Standardized Tests, Case studies).
Correlational Research (Positive and Negative)
Experimental Research (independent and Dependent variables, Experimental and Control groups, Double - Blind Experiments).

UNIT -II : INTELLIGENCE:

12 hours

- a) **Definition; Measuring intelligence;** criteria of good intelligence tests, types of intelligence tests (Binet tests, Wechsler scales, Group Tests of Intelligence)
- b) **Theories of intelligence:** Multiple intelligences, Gardner's Eight Intelligences, Sternberg's Triarchic Intelligence.
- c) **Influences on intelligence** - Genetic and Environmental only
- d) **Extremes in intelligence** - Mental Retardation, giftedness.
- e) **Emotional Intelligence.**

UNIT-III : LEARNING :

10 hours

- a) **Definition, types of learning;**
- b) **Biological factors in learning.**
- c) **Classical Conditioning:** (Pavlov's studies, acquisition, generalization and discrimination, extinction and spontaneous recovery) Applications of classical conditioning.
- d) **Operant conditioning:** Thorndike's Law of Effect; Skinner's approach to operant Conditioning, shaping, principles of reinforcement (positive and negative reinforcement, Primary and secondary Reinforcement).
- e) **Observational learning.**
- f) **Insight learning.**

UNIT - IV: MEMORY:

10 hours

- a) **Nature of memory** (Encoding, storage and retrieval)
Memory encoding- Attention, levels of Processing, Elaboration, Imagery.
- b) **Memory storage** – Sensory Memory, short –Term memory, Chunking and Rehearsal, working Memory, Long-Term Memory, Explicit Memory, Implicit Memory.
- c) **Memory Retrieval** – Retrieval Cues and retrieval tasks.
- b) **Forgetting** – Encoding Failure; Retrieval Failure; Memory and Study Strategies in encoding, storage and retrieval.

UNIT - V : MOTIVATION:

8 hours.

- a) **Nature;**
- b) **Approaches** – Instinct Approaches, Drive Reduction Approaches, Arousal Approaches, Incentive Approaches, Humanistic Approaches, Self-Determination Theory.

PRACTICALS

- 1 Observation & Suggestion
- 2 Habit Interference
- 3 Effect of Chunking on Recall
- 4 Bilateral Transfer
- 5 Effect of Cueing on Recall

Statistics :

- Measures of Central Tendency Mean, Median & Mode for Ungrouped Data & Grouped Data with only Frequency (No class Intervals) Long Method.

Project : Moti Quiz- Data Collection-25-30 years Working Professionals (Men & Women)

BASIC PSYCHOLOGICAL PROCESSES

II SEMESTER - BA/ B.Sc.

UNIT – I : BIOLOGY AND BEHAVIOR:

12 hours

- a) **An overview of the Nervous System:** neurons and nerves (structure of the neuron, neural impulse, synapse, neurotransmitters)
- b) **Central Nervous System:**
- c) **The Brain** – structure of the brain; brain stem; structure of the cortex; association areas of the cortex (Broca's area and Wernicke's area)
- b) **The Spinal Cord** – The Peripheral Nervous System – The Somatic Nervous System and the Autonomic Nervous System.
- c) **Techniques to study the brain.**
- f) **Endocrine glands.**

UNIT – II : SENSATION AND PERCEPTION:

10 hours

- a) **Sensation-** Purposes of sensation & perception; sensory receptors and the brain; ABCs of sensation.
- b) **Vision** – Colour Vision, After Image and Colour Blindness.
- c) **Perception** – ABCs of perception; The Constancies (Size, Shape and Brightness). Gestalt Principles; Depth perception; Perceptual Illusions.

UNIT – III : THINKING:

10 hours

Cognition; Concept formation (Importance); Problem solving (Steps in Problem Solving; obstacles in Problem Solving) Critical Thinking; Reasoning (Inductive and Deductive reasoning) Decision making; Creativity (Divergent and Convergent thinking).

UNIT – IV: EMOTIONS

8 hours

- a) **The Three Elements of Emotion** – The Physiology of Emotion; The Behavior of Emotion; The Subjective Experience of Emotion.
- b) **Theories of Emotion** – James – Lange Theory of Emotion, Cannon – Bard Theory of Emotion, Schachter – Singer Theory of Emotion; Lazarus and the Cognitive – Mediation Theory. Positive psychology Movement.

UNIT – V : PERSONALITY:

10 hours

- a) **Definitions of Personality, including Allport's definition.**
- b) **Approaches to the study of Personality** - Freud's Psychoanalytic theory (Personality's structures, Defense Mechanisms, Personality development) Roger's Approach; Trait Theories – The Big Five Personality Factors; Bandura's Social Cognitive Theory (Self - Efficacy) Skinner's Behaviorism.
- c) **Measurement of Personality** – Questionnaires, Rating Scales, Projective Tests.

References :

1. John W. Santrock, Psychology Essentials 2, II Edition (Updated) 2006, Tata McGraw Hill Publication.
2. Saundra K Ciccarelli and Glenn E Meyer, Psychology, South Asian Edition, Dorling Kindersley (India) Pvt. Ltd., Licensees of Pearson Education in South Asia.
3. Feldman. R.S. Understanding Psychology, IV Edition, 2006, Tata McGraw Hill Publication.
4. Robert A Baron, Psychology, III Edition, Prentice Hall Publications.
5. Sridhara A. Manovygnanika Sidhantagala Kaipidi. (Kannada)
6. Srivasthava, Indian Psychology
7. Anand Paranjpay, Indian Psychology.

PRACTICALS

- 1 Signal Detection
- 2 Stroop Effect
- 3 Muller Lyer Illusion
- 4 Mapping of Retinal Color Zones
- 5 Maze Learning

Statistics : Measures of Central Tendency-Mean, Median (short method) & Mode with Class Intervals and frequency.

Project : Analysis of data on Moti quiz - Gender Differences for sample collected by Individual.

CHILD PSYCHOLOGY
III SEMESTER- BA / B.Sc.

UNIT I : INTRODUCTION TO CHILD PSYCHOLOGY

6 hours

- a) **The field of child psychology** - Definition; careers in child development
- b) **Theories of child development**– Cognitive theories, Behavioral and social cognitive theories; Ecological model – Bronfenbrenner, Ethological model/perspective.
- c) **Methods and Designs** – Longitudinal, Cross – sectional, Sequential, Correlation.

UNIT – II : BIOLOGICAL FOUNDATION

15 hours

- a) **GENETIC FOUNDATION**- genetic code, sex cells, boy or girl (sex determination), multiple offspring, patterns of genetic inheritance.
- b) **Inheritance** - dominant and recessive relationship, dominance and recessive genes.
- c) **Diseases - Chromosomal abnormalities** – Down syndrome; **Abnormalities of the sex chromosomes** - Klinefelters, Fragile x , Turner's, XXX, XYY; **Gene linked abnormalities** - PKU, Sickle Cell Anaemia, Tay Sachs Disease.

PRENATAL DEVELOPMENT

- a) **Conception** - period of zygote, period of embryo, period of fetus.
Influences on prenatal development; Genetic counseling;
Prenatal diagnostic methods;
- b) **Child birth** – types of child birth - natural, prepared, home deliveries, medication; Birth complications – oxygen deprivation, pre-term and low birth weight; sudden infant death syndrome (SIDS); Stages of child birth; publications; Assessment – Apgar scale and Brazelton scale;

UNIT III : MOTOR AND SENSORY DEVELOPMENT

10 hours

- A) **MOTOR DEVELOPMENT** - Reflexes – new born reflexes; reflexes and development of motor skills; infant states of arousal – sleep and crying
Motor development in infancy – meaning; sequence of motor development – cephalocaudal and proximodistal; gross motor development; fine motor development – reaching and; handedness.
- B) **SENSORY DEVELOPMENT** - Vision, hearing, touch, taste, smell and balance

UNIT - IV : COGNITIVE DEVELOPMENT AND DEVELOPMENT OF LANGUAGE 10 hours

- A) **COGNITIVE DEVELOPMENT** - Piaget's theory of cognitive development –Memory - strategies of storing memory
- B) **LANGUAGE DEVELOPMENT** – components of language development; Pre-linguistic development – receptivity to language, first speech sounds,
Phonological development; semantic development; Pragmatic development; Bilingualism.

UNIT V : EMOTIONAL AND SOCIAL DEVELOPMENT:

9 hours

- A **EMOTIONAL DEVELOPMENT** : Development of emotional expression, emotional self regulation, acquiring emotional display rules, understanding and responding to emotions of others, individual differences .
- B **SOCIAL DEVELOPMENT** - : Functions of the family, growing up with siblings ; Media, TV, Academic and Pro-social learning, Imagination, Computers .

PRACTICALS

- 1 Learning Styles -VARK
- 2 Student Problem Checklist
- 3 Free Association
- 4 Paired Association Learning
- 5 Creativity

Statistics :

- SD Grouped & Ungrouped Data
- Significance of Difference between Means –SEM

Project: Child Psychology : Any one of three projects on ADHD, LD & Separation Anxiety in children.

CHILD PSYCHOLOGY
SEMESTER IV- BA / B.Sc.

UNIT I

MORAL DEVELOPMENT

8 Hours

What is moral development? Piaget's theory, Kohlberg's theory, Influences on moral reasoning; Pro-social and antisocial behavior.

UNIT II

EMERGENCE OF SELF

10 Hours

- A **Self** - Emergence of self and self awareness; self concept – middle childhood, cognitive & cultural influence on self concept; self esteem; structure of self esteem, changes in the level of self esteem, influences on self esteem .
- B **Play** - Functions of play, partners, classic study of play, types of play.

UNIT III:

PEERS AND SCHOOLING:

10 Hours

- A **Peers:** Importance of peer relations, Dev of peer sociability, influences on peer sociability, friendships, peer acceptance, peer groups, peer pressure and conformity .
- B **Schooling:** School transition, teacher-student interaction, teaching students with special needs.

UNIT IV:

DISORDERS OF CHILDHOOD:

12 Hours

ADHD, conduct disorder, oppositional defiance disorder, anxiety disorders of childhood, childhood depression, symptom disorders, (Enuresis, encopresis, sleep walking and tics) Pervasive developmental disorders (Autism).

UNIT V:

TREATMENT & OUTCOMES

10 Hours

ADHD; conduct disorder, oppositional defiance disorder ; anxiety disorders of childhood ;childhood depression; symptom disorders, (Enuresis, encopresis, sleep walking and tics); Pervasive developmental disorders (Autism), Other therapeutic techniques – family therapy and play therapy.

References:

1. Laura E. Berk- Child Development- 7th Edition, Easter economy edition, PHI publication
2. John.W.Santrok Child Development - 11th edition, Tata McGraw hill edition
3. Carson, Butcher and Mineka ,Abnormal Psychology- 11th edition, Pearson education

PRACTICALS

- 1 Self Concept Rating Scale (R.K.Saraswat)
- 2 Concept Formation for height and size
- 3 Two Point Threshold
- 4 Size Weight Illusion
- 5 Emotional Intelligence Inventory (MEII)

Statistics:

- Correlation-Rank Difference
- Pearson's Product Moment methods.

Project

Analyses of Data and discussion for the project worked on, in III Semester.

DEVELOPMENTAL PSYCHOLOGY

III SEMESTER BA/ B.Sc.

UNIT I

08 hours

INTRODUCTION TO DEVELOPMENTAL PSYCHOLOGY

- a) Human development today.
- b) Theoretical approaches to human development – Eric Erickson and Urie Bronfenbrenner
Domains of human development- Physical, cognitive, psycho-social development.
- c) Influences on Human Development-- Heredity, environment, maturation, family, socio-economic status and neighbors, culture, race or ethnicity .
- d) Major stages in Life Span Development (8 stages).
- e) Principles of Baltes's life span approach (6 principles)
- g) Developmental research designs – Longitudinal, Cross-sectional, Sequential and Microgenetic studies.

UNIT II

BIOLOGICAL BEGINNINGS

08 hours

- a) Conceiving a new life-Fertilization; Multiple Births
- b) Mechanisms of Heredity- Genetic Code, Sex Determination, Patterns of Genetic Transmission - Dominant and Recessive Inheritance: Genotypes, phenotypes, Multifactorial Transmission
- c) Mutation- Causes and types- Chromosomal and Gene linked abnormalities. – Chromosomal Abnormality-Down syndrome; **Sex-linked chromosomal abnormalities** - Klinefelters, fragile X, Turner's, XYY, triple X; **Gene linked abnormalities** - PKU, Sickle Cell Anaemia, Tay Sachs Disease.

UNIT III

PRENATAL LIFE

10 hours

- a) Prenatal Development
 - i) Stages of prenatal development : Period of germinal, embryonic and foetal stage
 - a. Environmental influences on prenatal development: i) Maternal factors-Nutrition, physical activity, drug intake, sexually transmitted diseases, maternal illness, maternal age, outside environmental hazards.
 - ii) Paternal factors.
 - b) Prenatal Assessment : Amniocentesis, chorionic villus sampling, embryoscopy, pre-implantation diagnosis, maternal blood test, umbilical cord blood sampling, ultrasound.
 - c) Birth Process- Stages of Child Birth.
 - d) Methods of delivery: Medicated, natural, prepared and caesarean.

UNIT IV INFANCY

12 hours

- a) Neonatal period : medical and behavioral assessment: Medical - Apgar scale, Behavioral - Brazelton scale ;Physical development in infancy - principles - cephalocaudal, proximodistal;
- b) Physical growth
 - 1) Early reflexes : Moro, grasping, tonic neck, babinsky, rooting, walking and swimming
 - 2) Early Sensory capacities : Touch, taste, smell, hearing and vision (sight)
Motor development- milestones of motor development- (gross and fine motor skills-head control, hand control and locomotion).
- c) Cognitive development : Piagetian approach - sensory motor stage
- d) Emotional development- stranger anxiety, separation anxiety, social referencing e)Language development- sequence of language development, early vocalization, recognizing language sounds, gestures, first words, first sentences.
- f) Social development- Socialization and internalization – developing a conscience, developing self – regulation.

UNIT V CHILDHOOD (Early and Late childhood)

12 hours

- a) **Physical development** : Bodily growth and change.
- b) **Motor development/skills**: gross motor skills, fine motor skills and handedness.
- c) **Cognitive development**: Piagean approach preoperational stage and concrete operational stage.
- d) **Emotional development**: Understanding emotions; Emotional growth .
- e) **Language development**: Vocabulary, grammar, syntax, pragmatics and social speech. Private speech, delayed language development.
- f) **Social development**- relationships with other children, choosing playmates and friends.

PRACTICALS

1. Learning Styles -VARK
2. Student Problem Checklist
3. Free Association
4. Paired Association Learning
5. Creativity

Statistics:

- SD Grouped & Ungrouped Data
- Significance of Difference between Means –SEM
- **Project : Developmental Psychology** : Learning Styles Sample-Age Group-16-20 years, Boys & Girls, (Eg: 5Boys+5 Girls from B.A compared with 5Boys+5 Girls from B.com)Compare learning styles of students from any two Faculties

DEVELOPMENTAL PSYCHOLOGY
IV SEMESTER B.A/ B.Sc.

UNIT I : PUBERTY & ADOLESCENCE

(12 hours)

- a) Puberty – the end of childhood,
- b) **Physical Development:** Adolescents' growth spurt, primary and secondary sexual characteristics, signs of sexual maturity .
- c) **Physical and Mental Health -**
- d) **Nutrition and Eating disorders; Substance abuse** – risk factors of drug abuse, gate way drugs – alcohol – marijuana and tobacco; **STD's** – sexually Transmitted diseases; **Search for identity** – theories by Erikson , Marcia; **Moral reasoning** – Kohlberg's theory; **Psychosocial Development:** Relationship with family, peers and adult society (in brief)

UNIT II: EARLY ADULTHOOD

(10 hours)

- a) **Physical Development :** Sensory & Psychomotor Functioning .
- b) **Cognitive development-**Piaget's shift to post formal thought, Schaie's Life span model of Cognitive development. Emotional Intelligence.
- c) **Psycho social development** -Erikson's Intimacy versus Isolation. Marital and non-marital life styles - Single life, Homosexual relationship, co-habitation ,Marriage.

UNIT III: MIDDLE ADULTHOOD

(12 hours)

- a) **Physical Development** - physical changes – Sensory & Psychomotor Functioning, Sexuality & Reproductive Functioning- Menopause & its Meanings; Changes in male Sexuality.
- b) **Cognitive development** –The distinctiveness of adult cognition – the role of expertise, integrative thought, practical problem solving, creativity.
- c) **PsychoSocial Development** –
Consensual Relationships: Marriage, Midlife divorce, Gay & Lesbian Relationships, Friendships, Relationships with maturing children.

UNIT IV: LATE ADULTHOOD - PART - I

(10 hours)

- a) **Physical development:** Sensory & Psychomotor Functioning-Vision, Hearing, Taste & Smell, Strength, Endurance, Balance & Reaction time, Sexual Functioning
- b) **Cognitive Development:** Intelligence & Processing Abilities; Competence in everyday tasks & problem solving .
- c) **Psychosocial Development- Personal Relationships in Late life-** Social contact, Relationships & Health ; Multigenerational Family; **Non-marital kinship ties-**Relationships with Adult children or their absence; Relationship with siblings; **Becoming Grandparents.**

UNIT V : LATE ADULTHOOD - PART - II

(06 hours)

- a) **The many faces of death;** Care of the dying.
- b) **Facing death & Loss-Psychological Issues-**Confronting one's death; Patterns of grieving Death & Bereavement across the Lifespan.
- c) **Finding Meaning & purpose in Life & Death**

REFERENCES

- 1 Diane E Papalia, Sally Wendkos Olds, Ruth Duskin Feldman, Human development, 9th edn, Tata McGraw Hill Publ.
- 2 John W Santrock A topical Approach to Life Span Development , 3rd Edition, Tata Macgraw-Hill Edition

PRACTICALS

1. Self Concept Rating Scale (R.K. Saraswat)
2. Concept Formation for height and size
3. Two Point Threshold
4. Size Weight Illusion
5. Emotional Intelligence Inventory (MEII)

Statistics: Correlation-Rank Difference
Pearson's Product Moment methods.

Project : Analyses of Data and discussion for the project worked on, in III Semester.

PAPER – V -HEALTH PSYCHOLOGY

SEMESTER V- BA/B.Sc.

UNIT I: INTRODUCTION:

8 hours

- a) Definition of Health Psychology.
History of health psychology; The Biomedical Model.
- b) Methods – Experiments, Correlation Studies, Prospective and Retrospective studies.

UNIT II: ILLNESS COGNITION AND BEHAVIOR CHANGE:

8 hours

- a) Illness cognition; the meaning of being healthy; Levinthal's self regulatory model of illness cognition, till stage 3.
- b) Transtheoretical model of behavior change.

UNIT III: STRESS

12 hours

- a) Stress: What is stress? Theories of Stress – (Cannon, Selye, Lazarus); Subjective correlates of stress.
- c) Coping with Stress; nature of coping; coping strategies; measuring coping; Social support.

UNIT IV: ADDICTIVE BEHAVIOUR – A PERSPECTIVE:

10 hours

- a) Addiction.
- b) Factors involved in learning addictive behavior; Stages of substance abuse;
- c) Interventions to promote cessation.

UNIT V: MODIFICATION AND ENHANCEMENT OF HEALTH BEHAVIOR

12 hours

- a) Modification – Changing Health Habits; Cognitive-Behavioral Approaches to Health Behavior Changes.
- b) Health Enhancing Behavior – Exercise, Maintaining a Healthy Diet, Food Habits, Weight Control.

Textbooks:

1. Jane Ogden – Health Psychology – a text book, 4th edition 2010, Tata McGraw Hill Education Private Limited, New Delhi.
2. Shelley E. Taylor – Health Psychology – 6th edition 2006, Tata McGraw Hill Publishing Company Limited, New Delhi.
3. Steve R. Baumgardner & Marie K. Crothers – Positive Psychology, 2009, Dorling Kindersley (India) Pvt. Ltd, licensees of Pearson Education in South Asia.

Books for Reference –

1. M. Robin Dimatteo & Leslie R. Martin – Health Psychology – 2002, Dorling Kindersley (India) Pvt. Ltd, licensees of Pearson Education in South Asia.
2. Alan Carr - Positive psychology - Dorling Kindersley (India) Pvt. Ltd, licensees of Pearson Education in South Asia.

HEALTH PSYCHOLOGY
SEMESTER VI - BA/B.Sc.

UNIT I

Psycho Neuro Immunology And Disorders Of Immune System

12 hours

- a) Immune system - Physical and Psychological correlates of the Immune System.
Disorders - HIV and transmission of HIV, approaches to intervention in HIV, role of the psychologist; Cancer, coping with HIV status and Cancer, Role of psychologist.

UNIT II: PAIN

10 hours

- a) Nature of pain; Early pain theories; including psychology in theories of pain; the gate control theory of pain;
- b) The role of psychosocial factors in pain perception; subjective – affective – cognitive processes .
- c) The role of psychology in pain treatment; CBT .
- d) Psychological intervention to manage pain
- Pain control techniques – pharmacological, surgical and sensory.
 - Managing pain – biofeedback, relaxation technique, hypnosis, acupuncture, distraction, guided imagery.

UNIT III : LIFE STYLE DISORDERS

10 hours

- CHD – Nature of CHD; Women and CHD; Cardiovascular reactivity, hostility and CHD, Depression and CHD, Type A Behavior.
- Hypertension – An Overview – Stress and Hypertension; Personality and Hypertension;
- Stroke and Its Consequences.
- Diabetes – Types; Implications; Problems in Self Management of Diabetes.

UNIT IV: RESILIENCE

8 hours

Nature of Resilience, Developmental perspectives, Clinical perspectives, Sources of resilience, the dangers of blaming the victim, Sources of resilience in children, sources of resilience in adulthood and later life, successful aging, Trauma, process of trauma, positive and negative effects of trauma.

UNIT V: INTERVENTION:

10 hours

Psychological, Psychiatric and Psychopharmacological interventions.

- a Health practitioners as effective agents of behavior change.
- b Compliance, Predicting, Patient satisfaction, Patient understanding ,
- c Patient reaction, Role of knowledge in health professionals, Problems with traditional approach, Problem of doctor variability, explaining variability – the role of health professionals' health beliefs.

Text Books –

- Jane Ogden – Health Psychology – a text book, 4th edition 2010, Tata McGraw Hill Education Private Limited, New Delhi.
- Shelley E. Taylor – Health Psychology – 6th edition 2006, Tata McGraw Hill Publishing Company Limited, New Delhi.
- Steve R. Baumgardner & Marie K. Crothers – Positive Psychology, 2009, Dorling Kindersley (India) Pvt. Ltd, licensees of Pearson Education in South Asia.

Books for Reference -

- M. Robin Dimatteo & Leslie R. Martin – Health Psychology – 2002, Dorling Kindersley (India) Pvt. Ltd, licensees of Pearson Education in South Asia.
- Alan Carr - Positive psychology - Dorling Kindersley (India) Pvt. Ltd, licensees of Pearson Education in South Asia.

ABNORMAL PSYCHOLOGY
V SEMESTER - BA/ B.Sc.

Unit: 1 Introduction-

6 Hours

Defining abnormality, criteria of abnormality- statistical, social, personal-discomfort, maladaptive. Myths and Misconceptions of abnormal behavior.

Unit:-2 Psychological models of abnormality

14 Hours.

Psychodynamic- Levels of consciousness, structure and dynamics of personality, psycho sexual stages, ego defense mechanisms, impact and criticisms

Behaviorism- Assumptions of behavioral psychology, mechanisms of learning-extinction, generalization, discrimination, shaping, Learning to follow rules, reinforcement, punishment, abnormal behavior as a product of learning

Cognitive behavioral perspective- Attribution theory cognitive appraisal-conceptual frame work for cognitive vulnerability, self efficacy, information processing

Humanistic theory- Roger's theory (relate to Abnormality)

Community and Interpersonal Mental Health model – Roots of Interpersonal perspective, Sullivan's Interpersonal theory; community and interpersonal personal relationships, impact of Interpersonal Model.

Unit-3 Stress and Mental Health

10 Hours.

Definition of stress, causes of stress-frustration, pressure and conflict. Coping Strategies.

Unit:-4 Anxiety based disorders

10 Hours.

Phobia- Agoraphobia, Social phobia, Specific phobia, General anxiety disorders, Panic attack- with agoraphobia, without agoraphobia, Obsessive Compulsive disorder.

Unit:-5 Somatoform and dissociative disorders

10 Hours.

Somatoform disorder-Somatization disorder, hypochondriasis, pain disorder, convulsion disorder.

Dissociative disorder- Fugue, Amnesia, Dissociative identity disorder, Depersonalization disorder, general causes and symptoms.

ABNORMAL PSYCHOLOGY-VII
VI SEMESTER- BA/ B.SC.

Unit:-1 Personality disorders **8 Hours**
Classification-General characteristics and causes. Examples of 3 clusters- Paranoid, Narcissistic and Avoidant personality.

Unit:-2 Schizophrenia and Paranoia **8 Hours**
Symptoms, types and general causes

Unit:-3 Mood disorders **10 Hours.**
Depressions that are not mood disorder (Normal depression) Unipolar disorder- Dysthymia and Major depressive disorder. Bipolar disorder- Bipolar I and Bipolar II general causes and symptoms; Suicide-factors associated with suicide.

Unit:-4 **12 Hours**
Brain disorders and other cognitive impairments- Dementia, Delusion, Delirium & Mental retardation- Microcephaly Hydrocephaly, Macrocephaly, Downsyndrome, PKU, Cretinism; AMD Classification. Developmental disorders- Dyslexia and Autism.

Unit:-5 Therapy **12 Hours**
Psychodynamic- free association and analysis of dreams, resistance & transference
Behavior therapy- aversion, modeling, systematic use of reinforcement
Cognitive Behavior therapy- Rational emotive behavior therapy
Humanistic therapy- Client centered & Gestalt therapy

References:

1. Lauren B Alloy, John.H.Riskind, Margaret J Manah, Abnormal Psychology Current perspective-9th edition
2. Robert C Carson, JamesN Butcher, Susan Mineka, Jill M Hooley, Abnormal Psychology 13th edn
3. Rosen and Gregory, Abnormal Psychology.

COUNSELLING PSYCHOLOGY

V SEMESTER - BA/ B.Sc.

- UNIT-I** 10 hours
INTRODUCTION
Definition of Counselling, Goals of Counselling, Scope of Counselling. Difference between Counselling, Guidance and Psychotherapy. Historical background of Counselling. Current Trends.
- UNIT-II** 12 hours
THEORETICAL APPROACHES TO COUSELLING
Psycho-Analytical, Behavioural, Cognitive and Humanistic counseling.
- UNIT-III** 08 hours
THERAPEUTIC APPROACHES TO COUNSELLING
Cognitive-Behavioral Therapy: Rational Emotive Behavioural Therapy, Cognitive Therapy, and Reality Therapy, Gestalt Therapy, Client – Centered Therapy, Crisis Counselling.
- UNIT-IV** 12 hours
PROCESS OF COUNSELLING
Client-Counsellor Relationship establishment, Problem Identification and Exploration. Working in a Counselling relationship: Counsellor skills in the understanding and action phases – Changing perceptions, Leading, Multifocused responding, Accurate empathy, self disclosure, immediacy, Humor, Confrontation, Contracting, Rehearsal, Transference and Counter Transference. Planning for Problem-solving, Solution Application and Termination. Issues related to termination - Follow-up, Referral and Recycling.
- UNIT-V** 08 hours
PERSONAL ASPECTS OF COUNSELLING SKILLS
Counselling Skills: Communication Skills :Non –verbal and Verbal Communication Skills. Variables affecting the Counselling Processes: Counsellor Variables – Age, Experience, Sex, Interest, Perceptual Sensitivity, Personal Adjustment, Personal Security, Genuineness, Counsellor's Attitude and Beliefs, Rapport, Empathy. Portrait of an Effective Counsellor. Counsellee factors.
- REFERENCES:**
1. Samuel.T.Glading, (6th Edition), Counselling, A Comprehensive Profession. Dorling Kindersley India Limited, Pearson.
 2. Robert.L.Gibson, Marianne.H. Mitchell, Introduction to counselling and guidance. 7th edition, Prentice Hall India Private Limited.
 3. S.Narayana Rao- Counselling and Guidance Tata Mc Graw Hill Publication. Co.Ltd. NewDelhi.
 4. E.R.Welfel, Levis.E. Patterson- The Counselling Process- A multi-theoretical Integrative Approach.

COUSSELLING PSYCHOLOGY

VI SEMESTER- BA/ B.Sc.

UNIT-I

12 hours

TESTING, ASSESSMENT AND DIAGNOSIS IN COUNSELLING.

Tests and Test Scores, Problems and Potential of using tests, Qualities of Good tests – Validity, Reliability, Standardization and Norms. Classification of tests, Intelligence and Aptitude Tests, Interest and Career Tests, Personality Tests, Achievement Tests: Administration and Interpretation of Tests, Assessment, Diagnosis.

UNIT-II

10 hours

GROUP COUNSELLING

Definitions and Explanations. Group Counselling – Theoretical considerations, Values of Group Counselling, Selection of Group Members. Group Processes: Establishment of the Group, Identification, Productivity, Realization, Termination. Similarities and Differences between Individual and Group Counselling.

UNIT-III

08 hours

CAREER COUNSELLING

Definition and Classification. The importance of Career Counselling. The Scope of Career Counselling. Career Information. Career Counselling with Adolescents, Adults, Women and Ethnic Minorities. The changing nature of the world of work.

UNIT-IV

12 hours

SPECIAL AREAS IN COUNSELLING

Marriage, Couple, and Family Counselling: The changing forms of family life, Marriage and Couple Counselling, Family Counselling.

Abuse and Disability Counselling Abuse: Interpersonal Abuse(only definition), Intra-Personal Abuse – Substance Abuse – Nature, Prevention, Treatment.

Counselling people with disabilities: Nature of disabilities. Clients with Specific disabilities - Physical, Mental disabilities, Attention Deficit Disorder(ADD) or Attention Deficit Hyperactivity Disorder(ADHD), HIV/AIDS

UNIT-V

08 hours

ETHICS IN COUNSELLING: Codes of Professional Ethics, Ethical Principles: Respect for Autonomy, Beneficence, Nonmaleficence, Justice, Fidelity. Ethical Theory: Relationship between Ethics and Law; Common Ethical violations by Mental Health Professionals.

REFERENCES:

1. Samuel. T. Glading, (6th Edition), Counselling, A Comprehensive Profession. Dorling Kindersley India Limited, Pearson.
2. Robert. L. Gibson, Marianne.H. Mitchell, Introduction to counselling and guidance. 7th edition, Prentice Hall India Private Limited.
3. S. Narayana Rao- Counselling and Guidance Tata Mc Graw Hill Publication. Co.Ltd. NewDelhi.
4. E.R. Welfel, Levis.E. Patterson- The Counselling Process- A multi-theoretical Integrative Approach.
5. Corey m s, & Corey g, 1998 3rd edition, Brooks Cole publication, Becoming a helper.
6. Manual for theory & practice of counseling and psychotherapy 2001 6th edn.
7. Cromier W.H & Cromier L.F Interviewing strategies for helpers –fundamental skills and cognitive behavior.

INDUSTRIAL ORGANIZATIONAL PSYCHOLOGY

SYLLABUS for V SEMESTER

UNIT-I

12 Hours

INTRODUCTION

Definition, Goals, Forces and Fundamental concepts -Nature of people and nature of organization.

History of industrial Psychology and Organizational Behavior,

Areas of Industrial psychology.

Two classical studies-A). Time and motion study -Nature and characteristics, Use of Therbligs.

Principles, psychological implications and shortcomings-

Objections to change- Intrusion of an outsider, Increased feeling of insecurity.

Hawthorne studies – Nature, Implications and criticisms.

Importance of Time and Motion studies and Hawthorne studies.

I-O Psychology as a career: Training & Employment.

UNIT II

10 hours

JOB ANALYSIS AND SELECTION

Job Analysis: Definition and methods – Questionnaire method, Checklist method, Individual interview method, Observation, Group interview method, Technical conference method, Diary method, Work participation method and Critical incident method.

Selection: Application blanks. Psychological tests used in selection – intelligence tests, personality tests, interest tests and aptitude tests.(mention two in each area).

Interview – guided interview, unguided interview, stress interview and group interview.

UNIT III

10 hours

EMPLOYEE ATTITUDES AND THEIR EFFECTS

The Nature of Employees Attitudes -Job satisfaction, Job Involvement, Organizational Commitment, Work Moods. Effects of Employee Attitudes- Employee Performance, Turnover, Absence & Tardiness, Theft, Violence, Other Effects.

Studying Job Satisfaction-Benefits of job satisfaction studies, Use of Existing job satisfaction Information, Changing Employee Attitudes

UNIT IV

08 hours

MOTIVATION AND REWARD SYSTEMS

Motivation- Goal setting- elements, Content Theories of Motivation – Herzberg's-Motivator-Hygiene (Two factors) Theory, Alderfer's- E-R-G Model.

Reward system- Financial and Non-financial incentives.

Purposes & Types- Incentives Linking Pay with Performance, Wage Incentives, Profit Sharing, Gain Sharing, Skill-Based Pay.

UNIT V-

10 Hours

CONSUMER PSYCHOLOGY

Scope of Consumer Psychology; **Nature and Scope of Advertising;** Types of Advertising Appeals- Trademarks, Product Image, Product Packaging, Sex in Advertisements and Women in Advertisement.

Consumer Behaviour and Motivation: Buying Habits and Brand Loyalty, Product Pricing

EDUCATIONAL PSYCHOLOGY
INDUSTRIAL ORGANIZATIONAL PSYCHOLOGY SYLLABUS
VI SEMESTER

UNIT-1 **12 hours**

PERFORMANCE APPRAISAL

Definition, Need for Performance Appraisal, Techniques of Performance Appraisal Methods –(a) **Objective Performance Appraisal methods**-Output measures, Computerised Performance Monitoring, Job-Related Personal Data Essay Methods, Critical Incident Method, CheckList Method, **Judgmental Performance Appraisal Methods**-Written narratives, Merit Rating Techniques-Rating Scales, Ranking Techniques, Paired-Comparison Technique, Forced –Distribution Technique, Forced Choice Technique, Behaviour Anchored Rating Scale(BARS), Behavior Observation Scales(BOS) (c) Management by Objectives (MBO). 360* Feedback. **Bias in Performance Appraisal**. How to Improve Performance Appraisals

UNIT-2 **10 hours**

TRAINING and DEVELOPMENT

Nature of Training; Goals of organizational training. **Methods** /approaches to training-classroom/lectures , conferences, films, Vestibule training, apprenticeship, Computer Assisted Instruction(CAI)Net Based training, In basket training, Role Playing, Executive Coaching.

UNIT-2 **10 hours**

MANAGING COMMUNICATIONS

Communication Fundamentals, Two-way Communication Process-Potential Problems; Communication Barriers – Impact of Barriers on Communication Process. Types of Communication: (a) Downward Communication (b) Upward Communication. c)Other Forms of Communication: Lateral Communication and Electronic Communication. d) Informal Communication – Grapevine Communication, Rumour.

UNIT-3 **08 hours**

LEADERSHIP, TEAM WORK AND TEAM BUILDING

Leadership – definition and nature, styles of leadership-authoritarian & democratic leaders, Transactional & Transformational leaders.

Team work - Life cycle of a team. Team building- need, process & skills.

UNIT-5 **10 hours**

STRESS AND COUNSELING

Definition, Employee Stress, Extreme Products of Stress- Burn-out, Trauma, Workplace Trauma, Workplace Violence, Post-Traumatic Stress Disorder. Causes of Stress- Job Related Causes of stress, Stress& Job Performance, Individual differences in Stress Response. Approaches to Stress Management **Employee Counseling** –nature of counseling, need for Counseling, Functions of Counseling, Types of Counseling

References:

1. **Schultz D.P. and Schultz E.S** –Psychology & Work Today Eighth Edition ,Pearson Education, Inc. and Dorling Kinderssley Publishing Inc.
2. **John W Newstrom-** Organizational Behaviour-Human Behaviour at Work. Twelfth Edition Tata McGraw-Hill Publishing Company Limited. New Delhi.
3. **Girishbala Mohanty-**Industrial Psychology and Organisational Behaviour, Kalyani Publishers, Ludhiana

EDUCATIONAL PSYCHOLOGY

V SEMESTER- BA/ B.Sc.

UNIT I :

8 hours

PSYCHOLOGY AND ITS BEARING ON EDUCATION

- a) Educational Psychology-Definition, Nature, Scope; Role of psychology for educational theory and practice; Aims and objectives of educational psychology.
- b) Research Methods-Program evaluation research, Action research and the Teacher as a researcher

UNIT II:

10 hours

APPLICATION OF LEARNING THEORIES TO EDUCATION.

- a) Behavioral approaches to learning-Classical conditioning, Operant conditioning {in brief}; applied behavior analysis in education-Increasing desirable behaviors, Decreasing undesirable behaviors; Evaluating operant conditioning and applied behavioral analysis.
- b) Social Cognitive approaches to learning –Bandura’s Social Cognitive theory,
- c) Observational learning {in brief}; Cognitive behavior approaches and Self regulation;
- d) Evaluating Social Cognitive approaches.

UNIT III :

12 hours

MOTIVATION AND OTHER FACTORS IN LEARNING.

- a. Motivation to achieve –extrinsic and intrinsic motivation; other cognitive processes-Attributions, Mastery motivation, Self-efficacy; Anxiety and Achievement; Teacher Expectations; Hard to reach, low achieving students.
- b. Fatigue in the classroom- Causes of fatigue and Effect of fatigue on learner

UNIT IV : MEMORY AND FORGETTING

10 hours

- a. Meaning, Nature, Types of memory; Improving STM-Chunking; Improving LTM-development of declarative knowledge, development of procedural and conditional knowledge.
- b. Forgetting- Nature, Causes.

UNIT V :

10hours

THEORIES OF INSTRUCTION AND MODELS OF TEACHING.

- a) Need for a theory of instruction;
- b) Theories of instruction-Formal theories, Descriptive theories and Normative theories of Teaching.
 - 1) Bruner’s Cognitive development theory; Gagne’s Hierarchical theory; Atkinson’s Decision-Theoretic Analysis for Optimizing Learning;
 - 2) Other Models-Lecture-recitation model, Montessori model, Human Relations model, Rogerian model;

TEXT BOOKS :

- 1) Bhatia and Bhatia - A Textbook of Educational Psychology (1996), Doaba House Booksellers and Publishers, Delhi.
- 2) S.K. Mangal – Advanced Educational Psychology, 2nd edition, (2002), Prentice Hall of India, New Delhi.
- 3) J.W. Santrock- Educational Psychology, 2nd Edition (2006) Tata Mc Graw – Hill publishing Company Limited, New Delhi.

BOOKS FOR REFERENCE :

- 1) Anita Woolfolk- Educational Psychology (2004), 9th Edition, Pearson Education (Singapore) Pvt.Ltd, Indian Branch, Delhi.
- 2) S.S. Mathur - Educational Psychology, (2007), Vinod Pustak Mandir, Agra.

**VI SEMESTER- BA/ B.Sc.
EDUCATIONAL PSYCHOLOGY**

UNIT I : LEARNER DIFFERENCES AND LEARNING NEEDS

12 hours

Individual differences in intelligence-meaning, one/many abilities, Multiple Intelligences, Intelligence as a process; Ability differences and Teaching- between class ability grouping, within class ability grouping; Cognitive and learning styles-Cognitive styles: Field dependent and field independent, Impulsive and reflective cognitive styles; Learning styles and Preferences: what are learning preferences and cautions.

UNIT II : EDUCATING EXCEPTIONAL CHILDREN.(COGNITIVE)

10 hours

- a) Definition and Nature;
- b) Gifted Children-Meaning, Definition, Needs & Problems, Identification, Education of gifted children;
- c) Mentally Challenged children-Definition (British Mental Deficiency Act, A.A.M.D), Nature, Detection, Identification, Classification on the basis of adaptive behavior, Planning education according to the level of mental retardation; d) Disadvantaged Children-Definition, meaning, and education; e) Learning disability-Definition (Kirk's), Nature and characteristics, Educational provisions for children with learning disability.

UNIT III : EDUCATING EXCEPTIONAL CHILDREN(PHYSICAL AND EMOTIONAL) 8 hours

- a) Types of disabilities: Sensory; Physical; Speech and language ;Emotional and Behavioral .
- b) Suggested remedial measures .

UNIT IV : MANAGEMENT OF CLASSROOM

10 hours

- a) Why classrooms need to be managed effectively;
- b) Management issues in Elementary and secondary school classrooms-the crowded, complex and Potentially chaotic classroom;
- c) Emphasizing instruction and a positive Classroom climate;
- d) Management goals and strategies; Designing the Physical environment of the classroom-principles of classroom arrangement, Arrangement style; creating a positive environment for learning-general strategies;
Creating, teaching and maintaining rules and procedures; Getting students to cooperate ; Being a good communicator-speaking skills, Listening skills, Nonverbal communication.

UNIT V: BEHAVIORAL PROBLEMS

10 hours

- a) Behavioral problems -
- b) Life Skills training; Use of behavioral strategies.

TEXT BOOKS :

- 1) Bhatia and Bhatia - A Textbook of Educational Psychology (1996), Doaba House Booksellers and Publishers, Delhi.
- 2) S.K. Mangal - Advanced Educational Psychology, 2nd edition, (2002), Prentice Hall of India, New Delhi.
- 3) J.W. Santrock- Educational Psychology, 2nd Edition (2006) Tata Mc Graw - Hill publishing Company Limited, New Delhi.

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- 2) S.S. Mathur - Educational Psychology, (2007), Vinod Pustak Mandir, Agra.

SOCIAL PSYCHOLOGY

SEMESTER - V

UNIT - I

10 Hours.

SOCIAL PSYCHOLOGY - DEFINITION AND SCOPE:

Nature and scope of Social Psychology - Definitions (by Baron and Taylor) social psychology as scientific in nature, focus on the behavior of individuals, understanding causes of social behavior and thought, actions and characteristics of others, cognitive processes, environmental variables, cultural context.

Methods in Social psychology - Systematic Observation, Correlation, Experimental.

UNIT - II

12 Hours.

PERCEPTION AND ATTRIBUTION: Self - perception and Person - perception; meaning and principles of social perception; Information used in Social Perception (non-verbal communication - facial expressions, gazes, stares, body language, touching).

Attribution - meaning and theories - Jones and Davis' theory of correspondent interference - non common effects, social desirability. Kelley's theory of Causal Attribution - consensus, consistency, distinctiveness.

Some basic sources of error in attribution - correspondence bias, actor - observer effect, self serving bias.

Applications of attribution theory - attribution and depression, attribution and prejudice.

Impression formation and impression management - central and peripheral traits, cognitive explanations and other aspects of impression formation - nature of first impressions and motives for forming them.

UNIT - III - SELF AND SELF - CONCEPT:

12 Hours.

Self - concept - nature and correlates of self esteem, attitude about self, evaluating one's self, social comparisons, downward social comparisons, effects of high v/s low self esteem, paradoxical self esteem, changes in self esteem.

Other aspects of self functioning - focusing, monitoring, and efficacy - focusing attention on self or external world, monitoring behavior using external and internal cues.

Self efficacy - nature and correlates, confidence in self.

Gender Stereotyping - nature and correlates, gender identity and gender stereotypes; basis of gender identity; gender - role behavior and reactions to gender role behavior, gender role at home and on the job; why gender roles are still powerful; why men and women differ - biology, acquired gender roles or both.

UNIT - IV - ATTITUDES

10 Hours.

Attitude - definition, nature, formation and change - formation of attitudes - social learning, want satisfaction, information exposure, group affiliation, personality factors.

UNIT - V - ATTITUDE AND PREJUDICE -

Types of attitude change; Nature of Prejudice, public opinion, stereotypes and stigma. Changing attitude and prejudice.

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SOCIAL PSYCHOLOGY
SEMESTER – VI

UNIT – I : GROUP DYNAMICS :

10 Hours

Group and team : definition and types of groups; stages of group formation; effects of groups on performance – social facilitation; coordination in groups.

Team development : Functions of a team; Decision making by groups; improving group decisions.

Leadership : meaning, characteristics of a leader; great person theory, trait theory, Big – 5 dimension leadership styles; initiating structure (production oriented) consideration (person oriented), autocratic, transformation leadership styles.

UNIT – II : INTERPERSONAL ATTRACTION :

8 Hours

Meaning; variables determining interpersonal attraction - proximity, positive and negative emotions, need to affiliate and observable characteristics (physical attractiveness), similarity.

Mutual liking, close relationships - family.

UNIT – III SOCIAL INFLUENCE:

10 Hours.

Social influence – meaning, conformity, factors affecting conformity, cohesiveness, group size, descriptive and injunctive social norms; bases of conformity - normative social influence, desire to be right.

Compliance – underlying principles (Cialdini); tactics – ingratiation, foot – in – the – door, hone ball, door – in – the – face, that’s – not – all, playing hard – to – get, pique.

Obedience - meaning, destructive obedience, intense indoctrination. Factors affecting and underlying principles of obedience.

UNIT IV : PROSOCIAL BEHAVIOR:

10 Hours.

Prosocial behavior – meaning; bystander effect; diffusion of responsibility; decision to help; situational factors that enhance/inhibit helping – attraction, attribution, prosocial models, self interest, moral integrity, moral hypocrisy.

Helpers and those who receive help – bystanders additional state; dispositional differences – empathy.

Additional factors – sense of wellbeing, achievement motivation, sociability, need for approval, altruistic personality. Characteristics of those being helped – aspiring for help, how it feels to receive help Theories of prosocial behavior – Empathy – Altruism; Negative state relief model; Empathy – Joy; Genetic determinism.

UNIT – V SOCIAL PROBLEMS AND SOCIAL HARMONY :

12 Hours.

Application of Social psychology in dealing with social problems.

Aggression, unemployment, poverty, discrimination (gender, caste, socio-economic status, disease related issues)

Role of media in social discord and harmony.

References :

1. Robert A Baron and Donn Byrne Social Psychology –, 10th edition, Pearson Education Publication.
2. Shelley A Taylor, Letitia Anne peplau, David O. Sears, Social Psychology, 2006, Pearson Education.
3. B. Kuppuswamy, Social Psychology

PRACTICALS FOR SEMESTER V (Paper V)

1. Eysenck Personality Inventory
2. FIRO – B
3. Type A/B Behavioral Pattern Scale
4. Internal – External Locus of Control Scale
5. Personal Values Questionnaire

Statistics: Critical Ratio

PRACTICALS FOR SEMESTER V- (Paper VI)

1. DBDA- 1 to 4
2. DBDA – 5 to 8
3. MRMT
4. Interest Inventory
5. Tweezer Dexterity

Statistics : 't' test.

Project : Interest inventory – college students – 18 – 21 years, 10 boys, 10 girls (should be related to the specialization taken).

PRACTICALS FOR Semester VI (Paper VII)

1. Assessment of Guidance needs
2. Bell's Adjustment Inventory (200 questionnaire)
3. GHQ
4. IPAT Anxiety Scale
5. Team effectiveness scale – Dhar & Dhar.

Statistics: Median Test

Project: Norms & Validation of Stress Inventory

PRACTICALS FOR Semester VI (Paper VIII)

1. Study of attitudes
2. RPM
3. Bhatia's Battery
4. GMA/ Test of General Intelligence of college students by Pall and Misra,
5. Emotional Maturity scale

Statistics – Chi-square.

Project – Team effectiveness scale – college students – sample size – 10 boys and 10 girls.

Syllabus Committee:

- 1 Dr. S.V. Surya Rekha, VVN Degree College
- 2 Dr. Vijayashri Ravi, Bishop Cotton Women's Christian College
- 3 Smt. Marina George, APS Arts & Science College
- 4 Smt. Anetha Srikumar, MES College
- 5 Smt. Sheena, SJR College
- 6 Smt. Shalini Satya Prasad, BMS College
- 7 Smt. Kamala. H, Maharani's Arts, Commerce and Management College for Women
- 8 Smt. Vinaya, VHD Central Institute of Home Science
- 9 Smt. Umadevi H.S, KLE College
- 10 Smt. Syeda Banu, Maharani's Science College
- 11 Dr. Renuka Paul, Bishop Cotton Women's Christian College
- 12 Smt. Molly Joy, Kristhu Jayanthi College
- 13 Smt. Sowmini Sebastian, Bishop Cotton Women's Christian College
- 14 Smt. Ajitha.E.A, Maharani's Science College for Women
- 15 Smt. George Varied Thekkan, Acharya Institute
- 16 Smt. Anusha, M.E.S College.
- 17 Smt Deepa Anand, VHD Central Institute of Home Science
- 18 Smt. Yashaswi, VHD Central Institute of Home Science
- 19 Snehal
- 20 Vani ballal, Government Arts College
- 21 Sukanya patil, Government Arts College
- 22 Smt. Mangala - B.S, APS Arts & Science College

Individual Compilation Committees:

Basic Psychological Processes-

1. Dr. Renuka Paul (BCWCC)
2. Ms. Sheena (SJRC)
3. Ms. Uma (KLE College)
4. Ms. Sowmini Sebastian

Child Psychology:

1. Ms. Anetha Srikumar (MES College)
2. Ms. Anusha(MES College)

Developmental Psychology:

1. Ms. Molly Joy (Kristhu Jayanthi)
2. Dr. Vijayashri (BCWCC)
3. Dr. Suryarekha (VVN Degree College)
4. Ms. Marina George (APS College)

Health Psychology: S

1. Dr. S.V. Surya Rekha(VVN Degree College)
2. Smt. Marina George APS Arts & Science College
3. Ms. Anetha Srikumar (MES College)
4. Ms. Syeda Banu(Maharani's Science College)

Abnormal Psychology:

1. Ms. Shalini Satya Prasad (BMS College)
2. Ms. Sowmini Sebastian (BCWCC)
3. Ms. Vinaya (VHD Home Science College)

Counselling Psychology:

1. Smt. Kamala.H, (Maharani's Arts, Commerce and Management College for Women).
2. Smt. Umadevi.H.S., (K.L.E. College)
3. Smt. Ajitha.E.A, (Maharani's Science College for Women).
4. Smt. George Varied Thekkan, (Acharya Institute).
5. Smt. Anusha, (M.E.S. College).

Industrial Psychology:

1. Dr. Vijayashri Ravi, Bishop Cotton Women's Christian College
2. Ms. Kamala. H, Maharani's Arts, Commerce and Management College for Women.
3. Ms. Umadevi. H.S., K.L.E. College
4. Smt. Ajitha. E.A, Maharani's Science College for Women
5. Sri. George Varied Thekkan, Acharya Institute.
6. Smt. Anusha, M.E.S College.

Educational Psychology

- 1 S.V. Surya Rekha, VVN Degree College
- 2 Anetha Srikumar, MES College
- 3 Deepa Anand, Smt. VHD Central Institute of Home Science
- 4 Yashaswi, Smt. VHD Central Institute of Home Science
- 5 Snehal
- 6 Vani ballal
- 7 Sukanya Patil

Social Psychology

1. Smt. Anetha Srikumar, MES College
2. Smt. Shalini Satya Prasad, BMS College
3. Smt. Vinaya, VHD Central Institute of Home Science
4. Smt. Mangala - B.S. APS College

6643-BUP-200-Jan 2013

ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ

ಜ್ಞಾನಭಾರತಿ, ಬೆಂಗಳೂರು - 560 056.

ಸಂಖ್ಯೆ : ಎಸಿಎ-2/ಎ3/ಸೆ.ಪ/ಯು.ಜಿ-ಪಿ.ಜಿ/ಪರಿಷ್ಕೃತ/ಹೊಸ. ಪ.ಕ್ರ/2010-11,

ದಿನಾಂಕ : 09.08.2010

ಅಧಿಸೂಚನೆ

ವಿಷಯ: ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯದ ವಿಜ್ಞಾನ ನಿಖಾಯಕ್ಕೆ ಸಂಬಂಧಪಟ್ಟ ಸ್ನಾತಕ ಮತ್ತು ಸ್ನಾತಕೋತ್ತರ ಪದವಿ ಕೋರ್ಸುಗಳ ಸೆಮೆಸ್ಟರ್/ವಾರ್ಷಿಕ ಪದ್ಧತಿಯ ಪರಿಷ್ಕೃತ / ಹೊಸ ಪಠ್ಯಕ್ರಮಗಳನ್ನು ಜಾರಿಗೊಳಿಸುವ ಬಗ್ಗೆ.

- ಉಲ್ಲೇಖ: 1. ದಿನಾಂಕ 06.01.2010 ಮತ್ತು 01.06.2010ರ ವಿಜ್ಞಾನ ನಿಖಾಯದ ಸಭೆಗಳ ನಿರ್ಣಯ.
2. ದಿನಾಂಕ 27.03.2010 ರಂದು ನಡೆದ ವಿದ್ಯಾವಿಷಯಕ ಪರಿಷತ್ತಿನ ಸಾಮಾನ್ಯ ಸಭೆ ಹಾಗೂ ದಿನಾಂಕ 26.07.2010ರ ಮುಂದೂಡಿದ ವಿದ್ಯಾವಿಷಯಕ ಪರಿಷತ್ತಿನ ನಿರ್ಣಯ

* * *

ದಿನಾಂಕ 27.03.2010 ರಂದು ನಡೆದ ವಿದ್ಯಾವಿಷಯಕ ಪರಿಷತ್ತಿನ ಸಾಮಾನ್ಯ ಸಭೆ ಹಾಗೂ ದಿನಾಂಕ 26.07.2010ರ ಮುಂದೂಡಿದ ವಿದ್ಯಾವಿಷಯಕ ಪರಿಷತ್ತಿನ ಸಾಮಾನ್ಯ ಸಭೆಗಳಲ್ಲಿ ಕೈಗೊಂಡ ನಿರ್ಣಯದನ್ವಯ ವಿಜ್ಞಾನ ನಿಖಾಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ, ಈ ಕೆಳಕಂಡ ಸ್ನಾತಕ / ಸ್ನಾತಕೋತ್ತರ ಪದವಿ ಕೋರ್ಸುಗಳಲ್ಲಿ ಸೆಮೆಸ್ಟರ್ / ವಾರ್ಷಿಕ ಪದ್ಧತಿಯ ಪರಿಷ್ಕೃತ / ಹೊಸ ಪಠ್ಯಕ್ರಮಗಳನ್ನು ಅವುಗಳ ಮುಂದೆ ನಮೂದಿಸಿರುವಂತೆ ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯವು ಅಧಿಕೃತವಾಗಿ ಈ ಮೂಲಕ ಪ್ರಕಟಿಸಿದೆ.

ಕ್ರ.ಮ	ಕೋರ್ಸುಗಳ ವಿವರ	ಅನುಮೋದಿಸಿದ ಸೆಮೆಸ್ಟರ್‌ಗಳು	ಅನುಮೋದಿಸಿದ ಹೊಸ/ಪರಿಷ್ಕೃತ ಅಸ್ತಿತ್ವದಲ್ಲಿರುವ ಪಠ್ಯಕ್ರಮಗಳು	ಜಾರಿಗೊಳಿಸಲಾದ ಶೈಕ್ಷಣಿಕ ವರ್ಷ
1.	Four Years B.S., Course	I to IV Semester	New Course	2010-11
2.	B.Sc Physics	I to IV Semester	Revised	2011-12
3.	M.Sc Physics	I to IV Semester	Revised	
5.	B.Sc Mathematics	I to VI Semester	Revised	
6.	M.Sc Mathematics	I to IV Semester	Revised	
7.	M.Sc Mathematics	Annual System (Ist & IInd Year)	Revised	
7.	B.Sc Botany	I to VI Semester	Revised	
8.	M.Sc Botany	I to IV Semester	Revised	2009-10
9.	B.Sc Electronics	I to IV Semester	Revised	
10.	M.Sc Electronic Science	Revised Syllabus for one practical paper of M.Sc II Sem (EL-206P)	Revised Syllabus for one practical paper of M.Sc II Sem (EL-206P)	
11.	Bachelor of Computer Application	III to VI Semester	Revised	

ಆದೇಶದ ಮೇರೆಗೆ
RML
ಕುಲಸಚಿವರು 9/8

ಗೆ.

ವಿಶ್ವವಿದ್ಯಾಲಯಕ್ಕೆ ಸಂಬಂಧಿಸಿರುವ ವಿಜ್ಞಾನ ವಿಷಯವನ್ನು ಬೋಧಿಸುತ್ತಿರುವ ಎಲ್ಲಾ ಕಾಲೇಜುಗಳ ಪ್ರಾಂಶುಪಾಲರುಗಳು ಮೇಲ್ಕಂಡ ಕ್ರಮಸಂಖ್ಯೆ 2 ರಿಂದ 11 ರವರೆಗೆ ಕೋರ್ಸುಗಳ ಪಠ್ಯಕ್ರಮಗಳನ್ನು ವಿದ್ಯಾಕಾರ್ಯಶಾಖೆ-2 ರಿಂದ ಒಂದು ಪತ್ರದ ಮುಖೇನ ಪಡೆಯಬಹುದಾಗಿದೆ.

ಪು.ತಿ.ನೂ 9.

09/12/10

ಪ್ರತಿಗಳು:

1. ಡೀನರು, ವಿಜ್ಞಾನ ನಿಖಾಯ, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
2. ವಿಜ್ಞಾನ ನಿಖಾಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ಮೇಲ್ಕಂಡ ಕ್ರಮಸಂಖ್ಯೆ 2 ರಿಂದ 11 ರವರೆಗಿನ ಕೋರ್ಸುಗಳ ವಿಭಾಗಗಳ ಮುಖ್ಯಸ್ಥರುಗಳು, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು - ಸಂಬಂಧಪಟ್ಟ ಪರಿಷ್ಕೃತ ಪಠ್ಯಕ್ರಮಗಳನ್ನು ವಿಶ್ವವಿದ್ಯಾಲಯದ ಗ್ರಂಥಾಲಯ ವೆಬ್‌ಸೈಟ್‌ನಲ್ಲಿ ಪ್ರಕಟಿಸಲು Soft copy and Hard copy ಗಳನ್ನು ಗ್ರಂಥಪಾಲಕರಿಗೆ ಒದಗಿಸಲು ಕೋರಲಾಗಿದೆ.
3. ಕುಲಸಚಿವರು (ಮೌಲ್ಯಮಾಪನ), ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
4. ಸಹಾಯಕ ಕುಲಸಚಿವರು, ವಿದ್ಯಾಶಾಖೆ-1, 3 ಮತ್ತು 4, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
5. ಉಪಕುಲಸಚಿವರು ವಿದ್ಯಾಶಾಖೆ-2, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
6. ನಿರ್ದೇಶಕರು, ಅಂಚೆ ತೆರಪಿನ ಮತ್ತು ದೂರಶಿಕ್ಷಣ ನಿರ್ದೇಶನಾಲಯ, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
7. ನಿರ್ದೇಶಕರು, ಪ್ರಸಾರಾಂಗ, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು ಮುಂಬರುವ ಗೆಜೆಟ್‌ನಲ್ಲಿ ಪ್ರಕಟಿಸಲು ಕೋರಿದೆ.
8. ಗ್ರಂಥಪಾಲಕರು, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ ಗ್ರಂಥಾಲಯ - ಸಂಬಂಧಪಟ್ಟ ಪಠ್ಯಕ್ರಮಗಳನ್ನು ವಿಶ್ವವಿದ್ಯಾಲಯದ ವೆಬ್‌ಸೈಟ್‌ನಲ್ಲಿ ಪ್ರಕಟಿಸಲು ಕೋರಿದೆ.
9. ಕುಲಪತಿಗಳ/ಕುಲಸಚಿವರ ಅಪ್ಪಕಾರ್ಯದರ್ಶಿಗಳಿಗೆ, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
10. ಸಮನ್ವಯಾಧಿಕಾರಿಗಳು, ಸಂಖ್ಯಾಶಾಸ್ತ್ರ ವಿಭಾಗ, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
11. ಕಛೇರಿ ಪ್ರತಿ.



BANGALORE UNIVERSITY
DEPARTMENT OF BOTANY

SYLLABUS

B.Sc. BOTANY
I - VI SEMESTER

2010

Handwritten signature
09/12/10

PROCEEDINGS OF THE MEETING OF BOS (UG) IN BOTANY

Venue : Department of Botany, Bangalore University, Jnana Bharathi Campus, Bangalore – 560 056.

Date : 16-02-2010

Time : 11.00 A.M.

Agenda : 1. Revision of the B.Sc. (Botany I to VI Semester)

<u>Members Present</u>		<u>Signature</u>
Dr. S. R. Ambika	- Chairperson	Sd/-
Dr. N. Sathyananda	- Member	Sd/-
Sri Muthe Gowda	- Member	Sd/-
Dr. H. Gokul	- Member	Sd/-
Mrs. Sujatha. N. S	- Member	Sd/-
Dr. Ravindra. V. Reshme	- Member	Sd/-
Dr. P. Anitha	- Member	Sd/-
Dr. K. R. Chandrashekar	- External Member	Sd/-
Dr. H. Niranjanmurthy	- External Member	Sd/-
Dr. Jenifer Lolita. C	- Co-opted internal Member	Sd/-
Sri T. K. Ghori	- Co-opted internal Member	Sd/-

The Chairperson welcomed the members to the meeting and thereafter he agenda was taken up for discussion.

I. Syllabus revision objectives:

1. To attract students towards basic Botany so as to inculcate in them the Botanical spirit as love and passion for plant life.
2. To provide training in various experimental methods and skills so as to stimulate interest in scientific research.
3. To expose the students to field studies and Botanical exploration so as to develop environmental awareness and social responsibility.
4. To enable them to take up competitive examinations.
5. To convert the syllabus to course credits to enable students to take up choice based course credits.

II. It was decided to make a frame work of the syllabus and to distribute it to different colleges to prepare and come up with a power point presentation before a workshop is conducted to discuss the same.

- Semester I : Dr. Najma Bhanu, Alameen College
Semester II : Dr. P. Anitha, BMS College
Semester III : Dr. H. Gokul National College
Semester IV : Sri T.K. Ghori KLE College
Semester V :
Paper V : Dr. Muthe Gowda, V. V. Puram College.
Paper VI : Dr. Ravindra. V. Reshme, MES College
Semester IV :
Paper VII : Dr. Jenifer Lolita. C. MSCw
Paper VII : Dr. N. Satyananda. Vijaya College

III. The venue of the workshop: It was decided to conduct the workshop on 5th and 6th March 2010 at KLE College, Rajajinagar, Bangalore.

Frame work

Semester I : Dr. Najma Bhanu, Alameen College

Microbiology

Bacteria

Cyanobacteria

Phycology

Semester II : Dr. P. Anitha, BMS College

Mycology

Plant pathology

Bryophytes

Plant Anatomy

Semester III : Dr. H. Gokul, National College

Pteridophytes

Paleobotany

Environmental biology

Phytogeography

Semester IV : Sri T.K. Ghor, KLE College

Gymnosperms

Embryology

Semester :V

Paper V : Dr. Muthu Gowda, V. V. Puram College.

Taxonomy and Economic Botany

Biodiversity and Conservation

Paper VI : Dr. Ravindra. V. Reshme, MES College

Cytology

Genetics and plant breeding

Evolution

Semester IV :

Paper VII : Dr. Jenifer Lolita. C MSCW, Molecular Biology and Plant Biotechnology, Plant Physiology

Paper VII : Dr. N. Satyananda, Vijaya College, Plant Biochemistry

Resolution:

1. The internal members are authorized to coopt the subject experts of their choice for their respective papers.

The chairperson is also authorized to finalize the syllabus after the workshop in consultation with the internal BOS members.

Proceedings of the meeting of syllabus committee held on 17-3-2010

at K.L.E Society's S. Nijalingappa College

The syllabus committee met at K.L.E Society's S. Nijalingappa College on 17-3-2010 and discussed the revision of B.Sc. syllabus for papers II, IV, V and VI for the respective semesters. Those absent are informed to communicate their respective revised syllabus to the chairperson before 20-3-2010. The following members were present

Dr.M.C.Gayathri, Dept of Botany. Bangalore University

M.C. Gayathri
17.3.10

Dr. Rose Maria NMKRV College

Rose Maria

Dr. Prathibha Jyothi Nivas College,

K. Prathibha 17.3.10

Smt Prasanna Mount Carmel College

M. Prasanna 17/3/10

Prof.Gadag KLES Nijalingappa college

Gadag

Dr.Jenifer Lolita.C Maharani's Science college

Jenifer Lolita C

Smt. Sujatha. N.S. MLACW

Sujatha
17-3-10

Dr. P. Anitha BMS College

Anitha
17/3/10

Sri.T.K.Ghori KLES Nijalingappa college

T.K. Ghori
17/3

Smt. Manjula SJRC College

(Deputy GFGC
Hosakote)

Manjula
17.3.10

Dr.S.R. Ambika Chairperson Dept of Botany. Bangalore University

S.R. Ambika
17/3/10

Proceedings of the meeting of BOS (U.G.) in Botany held on 05.04.2010 in the Department of Botany, Bangalore University, Bangalore – 560 056

Members Present:

Dr. H. Gokul

Dr. Ravindra V. Reshme

Dr. Muthegowda

Dr. Sangameshwar

Dr. P. Anitha

Dr. Najma Banu

Dr. Jenifer Lolitha. C

Dr. S. R. Ambika

Signature

Sd/-

Sd/-

Sd/-

Sd/-

Sd/-

Sd/-

Sd/-

Sd/-

Members absent:

Dr. Satyananda

Dr. Niranjanmurthy. H

Dr. Chandrashekar

1. The Board discussed in length the B.Sc., Semester syllabus and finalized the syllabus for I & II semester.
2. Draft syllabi for I, II, III & IV semesters were prepared, read and ratified.
3. Connected practical papers were also prepared, read & ratified.
4. It was unanimously decided that **RTI Act** will be included in the syllabus of constitution of India paper of the II Semester B.Sc., (Refer Order No-KIC/8/ADM/2010 Dated: 17.02.2010).
5. The Chairperson, BoS is authorized to incorporate required addition & deletions in the B.Sc., Botany syllabus.

QUESTION PAPER FOMRAT

The question papers of Theory examinations to follow the pattern specified below:

Marks for each question	Number of question to be Answered	out of	Total marks
1	30	30	30
5	6	8	30
Total			60

BANGALORE UNIVERSITY B.Sc. Semester Examination

BOTANY

Paper

Time: 3 Hours

Max. Marks: 60

A. Answer all the following by **choosing** the correct choice

(30 x 1 = 30)

B. Write notes on any **FIVE** of the following

(6 x 5 = 30)

I SEMESTER
PAPER I- DIVERSITY OF NON-VASCULAR PLANTS
(INTRODUCTION TO MICROBIOLOGY, VIRUSES, BACTERIA CYANOBACTERIA AND PHYCOLOGY)

	60 hrs
UNIT I: INTRODUCTION TO MICROBIOLOGY	10 hrs
Scope of Microbiology, Contributions of scientists to the field of Microbiology (Anton Von Leeuwenhock, Louis Pasteur, Robert Koch, Alexander Flemming) Branches of Microbiology, Isolation of microbes from soil—Brief account of culture media, Serial dilution, Pour plate method and Colony characteristics of Bacteria and Fungi.	
UNIT II: STUDY OF VIRUSES	8 hrs
A brief history of Virology -- (Adolf Mayer, Iwanowsky, Beijerinck, W.M Stanley, F. W. Twort), Characteristics of viruses, General structure-shape, size, protein coat, envelope, nucleic acids and carbohydrates. Outline classification of viruses. Viral diseases: Tomato leaf curl disease. Structure, replication and significance of:	
a) TMV	
b) HIV	
c) A brief account of Prions and Viroids	
UNIT III STUDY OF BACTERIA	15 hrs
Introduction, Occurrence, size and shape, Classification based on shape, arrangement of cells and flagella, Ultrastructure of bacterial cell.	
Cell wall- structure, Chemical composition, Cytoplasm, Mesosome, Ribosomes, Flagella, Pili, Capsules, Nuclear material, and Endospores.	
A brief account of Plasmids - Definition, properties, and types, Structure and importance of Ti plasmid. Bacterial nutrition- Phototrophs and Chemotrophs.	
Reproduction-Binary fission and Genetic Recombination.	
Economic importance - Role of Bacteria in Agriculture, Medicine & Industry. Bacterial disease: Citrus canker disease	
General account of Mycoplasmas Sandal spike disease.	
Immunology – Brief account of immune systems, application of Immunotechniques in agriculture & industry, monoclonal anti bodies (ELISA, Hybridoma Techniques).	
UNIT IV: STUDY OF CYANOBACTERIA	7 hrs
Introduction, General characters, Outlines of classification (Fritsch-1947), Thallus structure, Ultrastructure of cell, Photosynthesis, Reproduction, Economic importance of Cyanobacteria; SCP, Biofertilizers, role in water pollution.	
Type study: <i>Gloeocapsa</i> , <i>Anabaena</i> , <i>Scytonema</i>	
UNIT V: STUDY OF ALGAE	20 hrs
Introduction, General characters, Outlines of classification (Fritsch-1947), Thallus structure, Pigmentation, Reproduction and Economic importance of algae in Industry, Agriculture and Medicine, Occurrence, Structure and Reproduction and Life cycles of <i>Chlamydomonas</i> , <i>Volvox</i> , <i>Oedogonium</i> , <i>Chara</i> , <i>Ectocarpus</i> and <i>Polysiphonia</i>	

References

1. Aneja, K.R. (1993) Experiments in Microbiology, Pathology and Tissue Culture, Vishwa Prakashan, New Delhi.
2. Basu, A.N. (1993) Essentials of plant viruses, vectors and Plant diseases, new age International, New Delhi.
3. Chopra, G.L. (1984) A text book of Algae, Rastogi publications.
4. Desikachar, T.V.(1959) Cyanophyta, ICAR, New Delhi.
5. Fritch, R.E (1977) Structure and reproduction of Algae, Cambridge University press.
6. Pandey B.P, 1979, 2001, College Botany Volume I, S. Chand & Company Ltd, New Delhi
7. Power, C. B. and Dagainwala, H.F(1982)
8. Pelzar (1963) Microbiology, Tata Mc Graw Hill, New Delhi.
9. Singh. V, Pande. P.C and Jain. D. K, 2008- 2009, Rastogi Publications, Meerut.
10. Smith GM(1978)&(1996) Cryptogamic Botany Volume I, Tata Mc Graw Hill, NewDelhi
11. Sundar Rajan,S.(1997)College Botany Volume I Himalaya Publications, Mumbai.
12. Singh, R.P.(2007), Microbial taxonomy and culture techniques. Kalyani publishers, New Delhi.
13. Vashishta, B. R. Sinha, A.K and Singh, V.P, (1991) Algae. S. Chand and Co. Ltd, New Delhi

SEMESTER I - PRACTICAL PAPER-I INTRODUCTION TO MICROBIOLOGY, VIRUSES, BACTERIA CYANOBACTERIA AND PHYCOLOGY

Total units: 15

1. Study of instruments: Autoclave, Inoculation chamber, Hot air oven, Incubator and Inoculation loop
2. Sterilization of glass ware and media preparation (Nutrient Agar, Martin Rose Bengal Agar)
3. Isolation of Bacteria and Fungi from soil by pour plate method **04 units**
4. Colony characteristics of Bacteria and Fungi to identify the Colonies obtained **02 units**
(*Bacillus*, *Staphylococcus*, *E. coli*, *Penicillium*, *Aspergillus*, *Cladosporium*)
5. Study of Tomato leaf curl disease, Sandal spike disease & Citrus canker disease.
Gram's staining: a) *Rhizobium* from root nodules
b) *Lactobacillus* from curds
6. Measurement of cell concentration- Yeast cells / fungal spores using Hemocytometer, **02 units**
7. Type study of Cyanobacteria: *Gloeocapsa*, *Anabaena*, *Sytonema* **07 units**
8. Type study of Algae: *Chlamydomonas*, *Volvox*, *Oedogonium*, *Chara*, *Ectocarpus*, *Polysiphonia*

I - SEMESTER PRACTICAL QUESTION PAPER
INTRODUCTION TO MICROBIOLOGY, VIRUSES, BACTERIA CYANOBACTERIA AND
PHYCOLOGY

Time: 3 hrs.

Total marks 30

- | | | |
|-------|---|------------|
| 1 | Identify the given specimens A, B & C with labelled diagrams and reasons. | 3x3=9marks |
| <hr/> | | |
| 2 | Describe the colony characteristics of the given colony D and tabulate your observations. ----- | 2marks |
| 3 | Prepare temporary slide of E, sketch, label and identify with reasons Leave the preparation for evaluation. ----- | 4marks |
| 4 | Stain the given material F by Gram's staining. Write the procedure and identify with reasons .Leave the preparation for evaluation. | |
| OR | | |
| | Calculate the population of fungal spores / Yeast cells in sample F using haemocytometer.----- | 4marks |
| 5 | Identify the slides G and H with labelled diagrams and with reasons ----- | 2x3=6marks |
| <hr/> | | |
| 6 | a) Record | 3marks |
| | b) Submission | 2marks |

SCHEME OF VALUATION

1. Three specimens A, B and C – One from Algae, One from Cyanobacteria and One Specimen of diseases / Herbarium. (Identification-1 mark, labelled diagram with reasons-2 marks)
2. Colony characters of the given colony 'D' - 2 marks.
3. Specimen from algae-mounting-2marks, Identification, sketch & reasons-2marks
4. Specimen F---Gram staining. (Staining-2 marks, Procedure & Result -2 mark)

OR

Calculation of fungal spores/ yeast using Haemo cytometer (Procedure-2marks, Calculations -2 marks)

5. Two permanent slides from Algae(Identification-1mark,sketch & reasons 2marks)
6. a) Record----- 3 marks
- b)Submission of 2 algae / cyanobacteria materials----- 2 marks

MODEL QUESTION PAPER

PAPER- I DIVERSITY OF NON - VASCULAR PLANTS – PART I

Time: 3 Hrs

Max marks : 60

I. Answer the following by choosing the correct choice: 1x30=30

1. Palmella stage in *Chlamydomonas* is helpful in
 - a) Protecting the alga against dessication
 - b) Bringing about gametic union
 - c) vegetative reproduction
 - d) accumulating mucilage

2. Who first isolated TMV in its crystalline form?
 - a) Adolf Mayer
 - b) Iwanowsky
 - c) Stanley W. M
 - d) Beijerinck

3. Heterocysts are not seen in
 - a) *Gloecapsa*
 - b) *Scytonema*
 - c) *Nostoc*
 - d) *Anabaena*

4. Cocci arranged in cubes with 8 or more cells
 - a) Tetrads
 - b) Diplococci
 - c) Streptococci
 - d) Sarcinae

5. The prokaryotic genetic system contains
 - a) Either DNA or histones
 - b) DNA and histones
 - c) Neither DNA nor histones
 - d) DNA but no histones

6. The cause of 'red snow' is
 - a) *Chlamydomonas nivalis*
 - b) *Volvox globator*
 - c) *Chlamydomonas coccifera*
 - d) *Nostoc muscarum*

7. One of the interesting features of the viruses is that they
 - a) Multiply only in the host cytoplasm
 - b) Occur only inside bacteria
 - c) Are Made up of proteins only
 - d) multiply only outside the host

8. The stoneworts belong to the order
 - a) Oedogoniales
 - b) Charales
 - c) Volvocales
 - d) Conjugales

9. The bacterial cell wall is composed of
 - a) Peptidoglycan
 - b) Suberin
 - c) Lignin
 - d) Cellulose

10. Agar-agar is obtained from
 - a) *Ectocarpus*
 - b) *Sargassum*
 - c) *Polysiphonia*
 - d) *Gelidium*

11. Root nodules with nitrogen fixing bacteria are present in
 - a) Cotton
 - b) Wheat
 - c) Mustard
 - d) Gram

12. The first bacteriologist
 - a) Pasteur
 - b) Jenner
 - c) Leuwenhock
 - d) Robert Koch

13. The seaweeds belong to
 a) Chlorophyceae
 b) Phacophyceae
 c) Bacillariophyceae
 d) Rhodophyceae
14. The mycoplasma contains
 a) Only DNA
 b) Both DNA and RNA
 c) Only RNA
 d) Neither DNA nor RNA
15. CFU is
 a) Cell Forming Unit
 b) Cluster Forming Unit
 c) Colony Forming Unit
 d) Cytoplasm Forming Unit
16. Scytonema reproduces by the formation of
 a) Hormogonia only
 b) Heterocysts and endospores
 c) Hormogonia and akinetes
 d) Hormogonia and heterocysts
17. The cystocarp of *Polysiphonia* is
 a) Haploid
 b) Triploid
 c) Diploid
 d) Polyploid
18. Pour plate method is used
 a) To isolate pure cultures
 b) To preserve pure cultures
 c) To isolate impure cultures
 d) To discard mixed cultures
19. A virus that can reproduce without killing its host is called
 a) Temperate virus
 b) Retroactive virus
 c) Lytic virus
 d) Virion
20. The nannandria in *Oedogonium* gives rise to
 a) Oogonia
 b) Zoospores
 c) Antheridia
 d) Endospores
21. Most brown algae live in
 a) Fresh water streams
 b) Cool coastal waters of oceans
 c) Fresh water lakes
 d) Warm coastal waters of oceans
22. The Plaque stage of *Volvox* consists of
 a) 2 cells
 b) 8 cells
 c) 4 cells
 d) 16 cells
23. Solutions of crystal violet, iodine & alcohol are used in a staining procedure known as
 a) Gram stain
 b) Geisma stain
 c) Acid fast stain
 d) Wright's stain
24. The common method of reproduction in bacteria is
 a) Budding
 b) Fragmentation
 c) Fission
 d) Hormogone formation
25. The globule of *Chara* consists of
 a) 4 shield cells
 b) 16 shield cells
 c) 8 shield cells
 d) 24 shield cells

26. A cyanobacteria also known as single cell protein is
 a) *Anabaena* c) *Spirulina*
 b) *Gelidium* d) *Chara*
27. Transfer of genetic material from one bacterium to another by virus is called
 a) Transformation c) Transduction
 b) Conjugation d) Propagation
28. One of the following characters found in bacteria is a plant character
 a) Presence of flagella c) Prokaryotic nucleus
 b) Rigid cell wall d) Heterotrophic nutrition
29. False branching is found in
 a) *Oscillatoria* c) *Nostoc*
 b) *Anabaena* d) *Scytonema*
30. The non motile male gamete in Rhodophyceae is called
 a) Monospore c) Carpospores
 b) Spermatium d) Tetraspore

II. Answer any six of the following: -

6x5=30

1. Describe pour plate method of isolation of microorganisms.
2. Give an account of asexual reproduction in *Volvox*.
3. Describe the structure and multiplication of TMV.
4. Give an account of contribution of Louis Pasteur to the development of Microbiology.
5. What are plasmids? List the types and properties.
6. With labelled diagrams explain thallus structure and branching in *Scytonema*.
7. Compare cell walls of Gram positive and Gram negative bacteria.
8. Give an account of economic importance of brown algae.
9. Describe the structure of nucleolus of *Chara*.

II SEMESTER
PAPER II – DIVERSITY OF NON – VASCULAR PLANTS
(MYCOLOGY, LICHENS, MYCORRHIZA, PLANT PATHOLOGY, BRYOPHYTES AND
PLANT ANATOMY)

		60 Hrs
UNIT I:	<p>Mycology : Introduction: General characters, occurrence, thallus organization, reproduction & classification. Structure, reproduction and life history of <i>Albugo</i>, <i>Penicillium</i>, <i>Puccinia</i> and <i>Alternaria</i> and economic importance : Role of fungi in medicine, agriculture and industry</p> <p>Lichens: General account, Structure and reproduction. Ecological and economic importance.</p> <p>Mycorrhiza: General account</p> <p><i>Saccharomyces</i> – A model genetic organism.</p>	20 hrs
UNIT II:	<p>Plant Pathology: General account of symptoms, pathogen, etiology, mode of infection and management of:</p> <p>Fungal diseases: Koleroga, Ergot of Bajra, Coffee rust, Grain smut of Sorghum, Blast disease of Rice, Red rot of Sugarcane & Tikka disease of Groundnut.</p> <p>A brief account of biopesticides: Neem, <i>Trichoderma</i> & <i>Bacillus thuringiensis</i>.</p>	10 hrs
UNIT III:	<p>Bryophyta: General characters, Type study of distribution, structure, reproduction, classification and alternation of generations in Bryophytes.</p> <p><i>Marchantia</i>, <i>Anthoceros</i> & <i>Funaria</i>.</p>	15 hrs
UNIT IV:	<p>Plant anatomy: Meristematic tissues – Structure, function, classification. Organization of Apical meristems : Tunica – Corpus theory and Histogen theory. Secretory cells and Tissues: Structure, classification and significance. Vascular tissues : A brief account</p> <p>Secondary growth : Origin and activity of Vascular cambium in dicot stem.</p> <p>Wood anatomy: A brief account and commercial application in paper and fibre industry etc. <u>Anomalous secondary growth</u> : A general account. (<i>Dracaena</i> & <i>Boerhaavia</i>)</p>	15 hrs

Practical II
DIVERSITY OF NON - VASCULAR PLANTS (MYCOLOGY, LICHENS, MYCORRHIZA,
PLANT PATHOLOGY, BRYOPHYTES & PLANT ANATOMY)

		Total units allotted: 15 Units
I	Identification and classification of fungal members included in the theory.	4 Units
II	Demonstration of mushroom cultivation	
III	Study of Lichens	
IV	Study of Mycorrhiza	3 Units
V	Study of Plant diseases included in the theory	2 Units
VI	Study of forms of Bryophytes included in the theory	3 Units
VII	Normal and anomalous secondary growth in stem Eg. <i>Tridax</i> , <i>Dracaena</i> stem and <i>Boerhaavia</i> stem.	3 Units
VIII	Field visit to study pathogen and host interaction.	
IX	Report of field visit + Project report of mushroom cultivation / Application of biofertilizers.	

REFERENCES

1. Alexopoulos J& W.M Charles(1988) *Introduction to Mycology* Wiley Eastern, NewDelhi.
2. Alexopoulos (1992) *An introduction to Mycology*, New Age International, New Delhi.
3. Chopra, G.L. *Bryophytes*, S. Chand and Co.
4. Mundkar, B.B. *Fungi-and Plant diseases*
5. Parihar, N.S. (1970) *An Introduction to Embryophyta. Vol. I Bryophyta* Central Book Depot. Allahabad.
6. Pandey, B.P. 2001, *College Botany Vol. I: Algae, Fungi, Lichens, Bacteria, Viruses, Plant Pathology, Industrial Microbiology and Bryophyta*. S. Chand and company Ltd, New Delhi.
7. Sporne, K.R (1966) *Bryophytes*, 4th Ed., B.I Publishing. Pvt. Ltd.
8. Sambamurthy, A.V.S.S. 2006. *A text book of Plant Pathology*. I.K. International Pvt. Ltd., New Delhi.
9. Sharma, O.P. 1992. *Textbook of Thallophyta*. Mcgraw Hill Publishing Co., New Delhi.
10. Thakur, A.K. and S.K.Bassi. 2008. *A Textbook of botany: Diversity of microbes and Cryptogams*. S. Chand and Company Ltd, New Delhi.
11. Vashishta, B.R. 1990. *Botany for degree students: Fungi*, S. Chand and Company Ltd, New Delhi.
12. Vashishta, B.R., A.K. Sinha and Adarsha Kumar. 2008. *Botany for Degree Students: Bryophyta*. S. Chand and Company Ltd, New Delhi.
13. Watson, E.V. 1974. *The structure & life of Bryophytes*, B.I. Publication, New Delhi.
14. Katherine Easu, (1993). *Anatomy* 2nd Ed. Wiley Eastern Pvt. Ltd. New Delhi.
15. Smith G.M.(1994) *Cryptogrammic Botany Vol II*, 2nd Ed, Tata Mc Graw Hill, NewDelhi
16. Singh, R.S. (1978) *Plant Diseases* 4th Ed. Oxford and IBH, New Delhi.
17. Jim Deacon (2007) *Fungal Biology*, 4th Ed, First Indian reprint Blackwell publishing

II Semester Practical Question Paper II (MYCOLOGY, LICHENS, MYCORRHIZA, PLANT PATHOLOGY, BRYOPHYTES AND PLANT ANATOMY)

Time : 3 Hours

Max Marks : 30

- | | | |
|---|---|-------|
| 1 | Identify the specimens A, B & C With labeled diagrams and reasons. | 3X3=9 |
| 2 | Prepare a temporary Safranin stained T.S of the material 'D'. Sketch, Label and Identify with reason, leave the preparation for evaluation. | 1X5=5 |
| 3 | Write critical notes on E | 1X2=2 |
| 4 | Identify the slides F,G & H with labeled diagrams and reasons | 3X3=9 |
| 5 | Class record and submissions | 3+2=5 |

Scheme of Valuation

- 1) Two specimens from fungi and one from Bryophyta (Identification – 1 Mar, Labelled diagram with reasons – 2 Marks)
- 2) Any one of the following may be given - Stem of *Tridax*, *Dracaena* or *Boerhaavia* stem, (Staining and Mounting – 3 Marks, Sketch and Labeling – 1 Mark, Identification with reasons – 1 Mark)
- 3) One diseased palnt / Lichens / Mycorrhiza (Identification – 1 Mark & Critical points – 1 Mark)
- 4) One from Bryophytes, One from Fungi and One from Anatomy (Identification – 1 Mark, Labelled diagrams with reasons – 2 Marks)
- 5) Class records & Submissions: 3 herbarium sheets from Plant pathology (Marks: 2+3)=5

Model Question Paper

Paper-II : Mycology, Lichens, Mycorrhiza, Plant Pathology, Bryophytes & Plant Anatomy

Time: 3 Hours

Max Marks= 60

I. Answer the following by choosing the correct choice

1x30=30

- 1) Facultative saprophyte is
 - a) Always parasite
 - b) Parasite but can be saprophyte
 - c) Saprophyte but acquires a parasitic mode
 - d) Always saprophyte
- 2) All heterotrophs require an environment which can provide
 - a) Organic compounds
 - b) Vitamin A
 - c) Ammonium salt
 - d) Nitrates in solution
- 3) Fungal hyphae penetrates hard cell walls of their hosts with the help of
 - a) Sugar exudates
 - b) Hormones
 - c) Enzymes
 - d) Sharp tips
- 4) Fungal hyphae get arranged in parallel manner to constitute
 - a) Trama
 - b) Hymenium
 - c) Fruiting body
 - d) Fructification
- 5) A dark brown compact mass of mycelium acting as a resting body is called
 - a) Sclerotium
 - b) Chlamydospore
 - c) Rhizomorph
 - d) Zoospore
- 6) When a portion of fungal mycelium is used in the formation of reproductive structures, the organism is called
 - a) Eucarpic
 - b) Acarpic
 - c) Holocarpic
 - d) Cystocarp
- 7) The mycelium is typically coenocytic in
 - a) Phycomycetes
 - b) Ascomycetes
 - c) Basidiomycetes
 - d) Deuteromycetes
- 8) White rust of crucifers is caused by
 - a) *Phytophthora*
 - b) *Albugo*
 - c) *Puccinia*
 - d) *Penicillium*
- 9) Hypertrophy of floral parts in a cruciferous plant is caused by
 - a) Conidia of *Cystopus*
 - b) Conidiophores of *Cystopus*
 - c) Accumulation of hyphae of *Cystopus* for sexual reproduction
 - d) Stunted growth
- 10) Yeast is an important source of
 - a) Protein
 - b) Riboflavin
 - c) Sugar
 - d) Ascorbic acid
- 11) Which of the following is commonly called as blue-green mould?
 - a) *Aspergillus*
 - b) *Penicillium*
 - c) *Alternaria*
 - d) *Puccinia*

- 12) In *Puccinia* diploidisation occurs in the
a) Teleutospores c) Uredospores
b) Aeciospores d) Pycniospores
- 13) Roots of *Pinus* seedling are associated with
a) Fungus c) Algae
b) Bacteria d) Microbes
- 14) Mycorrhizal association is found in
a) Fungi and tree root c) Algae and *Azolla*
b) Algae and Fungi d) Algae and tree root
- 15) A common phycobiont in lichens is
a) *Microcystis* c) *Euglena*
b) *Trebouxia* d) *Citraria*
- 16) Lichens are best indicators of
a) Air pollution b) Water pollution c) Soil pollution d) All pollution
- 17) Draw a neat labeled diagram of ventral surface of liver wort
- 18) Elaters and pseudoelaters are meant
a) For absorption of nutrition c) For spore dispersal
b) To provide mechanical strength d) For conduction of sap
- 19) Gemma are asexual reproductive bodies of
a) Horn worts c) Liver worts
b) Mosses d) Stone worts
- 20) Which of the following is true moss?
a) Club moss c) Irish moss
b) Reindeer moss d) Peat moss
- 21) Periblem gives rise to
a) Pericycle c) Medulla
b) Cortex d) Epidermis
- 22) Quiescent centre is present in
a) Root apex c) Shoot apex
b) Vegetative apex d) Reproductive apex
- 23) A nectar-secreting gland cell characteristically contains
a) Granular cytoplasm filling the cell and a small nucleus
b) Granular cytoplasm lining a central vacuole and a small nucleus
c) Granular cytoplasm filling the cell and a large conspicuous nucleus
d) Vacuolated cytoplasm but with a large nucleus
- 24) The amphivasal vascular bundles are seen in the old stem of
a) *Helianthus* c) *Zea*
b) *Cucurbita* d) *Dracaena*

25) Match the following:

- | | |
|------------------|-------------------------|
| a) Grain smut | a) <i>Haemelia</i> |
| b) Ergot | b) <i>Claviceps</i> |
| c) Red rust | c) <i>Pyricularia</i> |
| d) Blast disease | d) <i>Sphacelotheca</i> |
| e) Coffee rust | e) <i>Puccinia</i> |

II Answer any Six of the following :

6x5=30

1. Explain the life cycle of polymorphic fungus on the primary host.
2. Asexual reproduction in *Penicillium*.
3. Role of fungi as model genetic organisms.
4. Give an account of endomycorrhiza.
5. Describe the structure of archegoniophore in *Marchantia*.
6. Explain anomalous secondary growth in monocot stem.
7. What is Koleroga? Give the symptoms, casual organism and control measures.
8. Give an account of secretory tissues.
9. Explain the capsule of *Funaria*.

III SEMESTER
PAPER III - PTERIDOPHYTES, PALEOBOTANY, ENVIRONMENTAL BIOLOGY AND
PHYTOGEOGRAPHY

		60 HRS
UNIT I:	Pteridophytes Introduction and classification (as per K.R. Sporne) Study of diversity in morphology, anatomy and reproduction of the following groups as studied in representative forms: i) Psilotopsida – Eg: <i>Psilotum</i> ii) Lycopsidea – Eg: <i>Selaginella</i> iii) Sphenopsida – Eg: <i>Equisetum</i> iv) Filicopsida – Eg: <i>Marsilea</i> (Developmental stages not required). A brief account of stelar evolution, heterospory & seed habit.	15 hrs
UNIT II:	Paleobotany : Contribution of Paleobotanist - Birbal Sahni. Geological time scale, methods of studying fossils; Process of fossilization, types of fossils. A brief account of Rhynia, Calamites (Stem), Cycadeoidea	10 hrs
UNIT III:	Environmental Biology Introduction and scope of environment biology Ecological factors: Climatic, Edaphic and Biotic. Ecosystem – Concept, components, study of marine, grassland and cropland ecosystems. Ecological Succession – Hydrosere, Xerosere Ecological adaptations – Hydrophytes, Xerophytes, Halophytes, Epiphytes and Parasites.	15 hrs
UNIT IV:	Ecosystem management – Soil reclamation, watershed management and remote sensing. Biodiversity : Genetic diversity and Ecological diversity. Need for integration of biodiversity with science and technology. Conservation of natural resources – Over exploitation of natural resources, Principle methods of soil conservation (Biological and Mechanical), Afforestation. Social forestry, Agroforestry. Forest conservation. Conservation of plant diversity – (In situ & Ex situ), Role of seed bank, gene bank and pollen bank.	15 hrs
UNIT V:	Brief account of Continental drift Phytogeography – Phytogeographical regions of India, Vegetational types of Karnataka state.	5 hrs

III SEMESTER
PAPER III - PTERIDOPHYTES, PALEOBOTANY, ENVIRONMENTAL BIOLOGY AND
PHYTOGEOGRAPHY

Total Units allotted = 15

UNIT I:	Identification and classification of Pteridophytes (Examples studied in the theory)	4 units
UNIT II:	Paleobotany – Study of specimens and slides (Fossil material / slide)	2 units
UNIT III:	Study of one example for each adaptation (Specimens and slides) Estimation of Oxygen & chloride content in given samples	4 units
UNIT IV:	Marking of vegetation types on Karnataka map	1 unit
UNIT V:	Study of quadrat and line transect methods in ecology (Preferably to be conducted in the field)	2 units
UNIT VI:	Submission of 4 permanent free hand sections (Both Pteridophytes and ecological adaptations).	2 units

References :

01. Agashe, S.N. (1995) Paleobotany. Plants of the past, their evolution, paleoenvironment & application in exploration of fossil fuels. Oxford I.B.H. New Delhi
02. Chandra S. Pteridology in the new millennium. International Book suppliers, New Delhi
03. Croizal, L.(1952). Manual of Phytogeography
04. Devoryas, T. (1967) Palaeobotany
05. Odum, E.P, (1971). Plant Ecology. W.B. Snderson Co., Philadelphia
06. Pandey, Botany Vol II, Chand Publication
07. Parihar N.S. (1977) The morphology of Pteridophytes. Central Book Depot, Allahabad
08. Polumine, N. (1950). Introduction to Plant Geography. Longmans Publishers, London.
09. Rashid A(1998). An Introduction to Pteridophyta. 2nd Ed., Vikas Pub. House Pvt. Ltd., New Delhi
10. Sharma P.D. (1993) Ecology & Environment, Rastogi Pub., New Delhi
11. Sporne, K.R. (1966) The Morphology of Pteridophytes. The structure of ferns and allied plants. Hutchinson University Library, London
12. Trivedi. A text book of Environmental Sciences. L.B.Publishers
13. Vasishta, B.R. Pteridophyta. S Chand & Co Ltd, New Delhi
14. Thomas N. Taylor, Edith L. Taylor and Michael Krings (2008), Paleobotany, Second Edition: The Biology and Evolution of Fossil Plants.
15. Wilson N. Stewart & Gar W. Rothwell (2010), Paleobotany & the Evolution of Plants

III SEMESTER
Practical Question Paper
PAPER III - PTERIDOPHYTES, PALEOBOTANY, ENVIRONMENTAL BIOLOGY AND
PHYTOGEOGRAPHY

Time: 3 Hours

Max Marks: 30

- | | | |
|---|--|----------------------|
| 1 | Identify and classify specimen A and B giving reasons. | 3 x 2 = 6 |
| 2 | Identify the slides C and D with reasons and diagrams | 3 x 2 = 6 |
| 3 | Comment on slide / specimen / photocopy/photograph of E | 3 x 1 = 3 |
| 4 | Identify and comment on ecological adaptation of F and G | 2 x 2 1/2 = 5 |
| 5 | Estimate the O_2 / Chloride content of the given sample H | 5 |
| 6 | Class record and slides | 3 + 2 = 5 |

Scheme of Valuation

1. Pteridophytes
(Identification & Classification – 1 mark; Reasons – 2 marks)
2. Pteridophytes
(Identification – 1 mark; Reasons – 1 mark, Diagram – 1 mark)
3. Fossil material
(Identification – 1 mark; Comment – 2 marks)
4. Specimens / Slides
(Identification – 1 mark; Comment – 1 $\frac{1}{2}$ marks)
5. O_2 / Chloride content
(Conducting the experiment – 2 marks; – 1, Principle and Procedure – 2 marks; Results – 1 mark)
6. Submissions: 4 free hand permanent slides of Pteridophytes and Ecological specimens + Class records (Marks 2 + 3)

MODEL QUESTION PAPER

PAPER III: PTERIDOPHYTES, PALEOBOTANY, ENVIRONMENTAL BIOLOGY AND PHYTOGEOGRAPHY

TIME: 3 hours

Max. Marks: 60

I. Answer the following by choosing the correct choice:

1 x 30 = 30

1. Pteridophytes represent the:
a) Amphibious plants c) Flowering plants
b) Vascular plants d) Naked seed plants.
2. Pteridophytes commonly possess:
a) Trachea b) Cotyledons c) Tracheids d) Albuminous cells.
3. *Selaginella* is also called as:
a) Moss b) Horse Tails c) Fern d) Resurrection Plant
4. Identify the heterosporous fern:
a) *Psilotum* b) *Selaginella* c) *Equisetum* d) *Marsilea*
5. Polystelic condition is observed in:
a) *Rhynia* b) *Marsilea* c) *Selaginella* b) *Psilotum*
6. Trabaculacae are present in the stem of:
a) *Selaginella* b) *Marsilea* c) Moss d) Ferns
7. Trilobed sporangia in *Psilotum* are also called:
a) Sporogonium b) Strobilus c) Synangia d) Cone
8. The eminent Indian Paleobotanist is:
a) Parihar b) Balraj Sahni c) M S Swaminathan d) Birbal Sahni
9. The Jurassic period was predominated by:
a) Thallophytes b) Angiosperms c) Tree Ferns d) Lycopod
10. The age of fossils can be estimated by:
a) Nitrogen fixation b) Carbon assimilation
c) Radioactive Phosphorus d) Carbon dating
11. *Rhynia* was first observed in the soils of:
a) India b) Yellow stone c) Germany d) Gold Coast
12. Petrified part of the plant are usually:
a) Pericarp b) Leaf c) Stem d) Ovule
13. Petrology is the study of:
a) Petrol b) Fossils c) Rocks d) Soil
14. Pedology refers to the study of:
a) Earth b) Phylogeny c) Soil d) Pseudofossils
15. Ground water enrichment may be done through:
a) Borewells b) Tanks c) Water Harvesting d) Wet Irrigation.

16. The non living component of an ecosystem include:
a) Biotic factors b) Edaphic factors c) Abiotic factors d) Decomposers
17. Floods can cause:
a) Vegetation growth b) High transpiration c) Erosion d) Salt resistance
18. Soil reclamation is done by:
a) Red Algae b) Moss c) Cyanobacteria d) Ferns
19. Plants growing in salt water marshes are called:
a) Mesophytes b) Epiphytes c) Xerophytes d) Halophytes
20. Sandal wood tree is a:
a) Total parasite b) Semi parasite c) Ectoparasite d) Endoparasite
21. Acid rain is due to increase of:
a) CO₂ b) NO₂ c) SO₂ d) O₂
22. The national agency for remote sensing is:
a) ICAR b) CSIR c) UGC d) NRSA
23. 'Ozone holes' were reported to be prominent in:
a) Arctic b) Antarctic c) African d) Australian region.
24. Westren Ghats are recorded as:
a) Zones of abundant wildlife b) Natural waterfall regions c) Arid zones d) Biodiversity Hotspot
25. The 'Chipko Movement' was initiated by:
a) Amrita Devi b) Suresh Heblkar c) S.L. Bahuguna d) UNEP
26. Seed banks, pollen banks and gene banks facilitate:
a) Easy propagation b) Mutations c) Food security d) Easy trading
27. An example of total parasite is:
a) Vanda plant b) Sandal wood tree c) Ipomea d) Cuscuta
28. Parasites absorb nutrition through:
a) Rhizoids b) Velamen c) Haustoria d) Rhizomes
29. Andaman and Nicobar islands possess:
a) Deciduous forests c) Temperate forests b) Pine forests d) Mangrove forests
30. Kodagu district in Karnataka has:
a) Pine forests b) Mangrove forests c) Dry deciduous forests d) Tropical evergreen forests

II ANSWER ANY SIX QUESTIONS:

6 X 5 = 30

1. With neat labeled diagrams explain the morphology and internal structure of the synangium in *Psilotum*.
2. Describe the strobilus, as seen in L.S, of *Selaginella* with the aid of a diagram.
3. Explain the structure and morphological nature of the sporocarp in *Marsilea*.
4. Describe the anatomy of the rhizome in *Marsilea*.
5. Describe the marine ecosystem.
6. Global warming and Green house effect' pose a serious threat, Discuss.
7. Explain the stages in the formation of Xerosere.
8. Elucidate the vegetation types of Karnataka.
9. Methods of Conservation

IV Semester

Paper IV- GYMNOSPERMS AND EMBRYOLOGY OF ANGIOSPERMS

60 HRS

- UNIT I: GYMNOSPERMS** - General account and classification, distribution, structure and reproduction of *Cycas*, *Pinus* and *Gnetum*. (Development stages not required), Economic importance of Gymnosperms. **15 hrs**
- UNIT II: EMBRYOLOGY OF ANGIOSPERMS: Male Gametophyte: Anther** -- **15 hrs**
Development and structure (detailed account of Anther wall layers inclusive of Tapetum)
Tapetum – Types, Cytology or nuclear behaviour of tapetum.
Microsporogenesis, development of Male Gametophyte (Microgametogenesis).
Brief account of Pollen embryo sac (Nemec Phenomenon) Pollen Morphology (A brief account on pollen wall, apertures, shapes, size and architecture based on number, position and characterisation (NPC System) Palynology and its applications.
- UNIT III: Female Gametophyte: Ovules** – Types (Orthotropous, Anatropous, Campylotropous, Amphitropous & Circinotropous) **15 hrs**
Megasporengesis – study of types of embryo sac or female gametophyte development, Monosporic type (*Polygonum* type), Bisporic type (*Allium* type) (Difference between *Allium* and *Endymion* type)
Tetrasporic type (*Fritillaria* type)
Fertilization – General account
(Germination of Pollen grain on stigma, Path of Pollen tube in style, Histology of style, entry into ovule – Porogamy, Mesogamy and Chalazogamy, Double fertilization – Pre- Mitotic, Post – Mitotic and intermediate).
Post fertilization changes.
Preferential fertilization and Polyspermy.
- UNIT IV: Endosperm** – Types (Free Nuclear - abinitio – Cellular and Helobial). **05 hrs**
Brief account on endosperm Haustoria (*Cucumis* and *Grevillea*) and Ruminant endosperm.
Embryo – Classification (Schnarf 's system), Development of Dicot embryo – Crucifer type Ex- *Capsella bursa pastoris* and Monocot embryo (Grass)
Polyembryony – A brief account on Parthenocarpy
- UNIT V: Experimental Embryology** – Definition, Totipotency, Basic techniques in plant cell & tissue culture methods, Nutrient media (MS & white's), Tissue and organ culture (anther, cell and protoplast culture), Practical applications, Embryology of Podostemaceae. **10hrs**
Embryology in relation to Taxonomy – Ex: *Trapa* and *Exocarpus*
Contributions of P. Maheshwari & B. G. L. Swamy.

SEMESTER IV
PRACTICAL IV
[Gymnosperms & Embryology of Angiosperms]

		Total Units – 15 Units
1	Study of Materials and Permanent slides of Gymnosperms- <i>Cycas</i> , <i>Pinus</i> and <i>Gnetum</i> (Included in theory).	5 units
2	Permanent slides of Microsporogenesis and male gametophyte.	1 unit
3	Mounting of Pollen grains – Grass, <i>Mimosa</i> , Pollinia of <i>Calotropis</i> – Micropreparation (By students)	1 unit
4	Hanging Drop Method – Eg: <i>Vinca</i> (By students)	1 unit
5	Types of Ovules – permanent slides	1 unit
6	Types of Placentation – Sectioning of ovary (By students to observe Axile, Basal, Parietal and Marginal type).	2 units
7	Mounting of embryo – <i>Tridax</i> / Mustard.	2 units
9	Mounting of endosperm – <i>Cucumis</i> .	2 units

References

1. Bhatnagar, S.P. and Moitra, A. **Gymnosperms**. New Age Publications, New Delhi.
2. Bhojuwani, S.S. & Bhatnagar, S.P. (1979). **The embryology of angiosperms**, Vikas Pub, New Delhi.
3. Coulter & Chamberline. (1964). **Morphology of Gymnosperms**. Central Book Depot.
4. Johri, B.M. (1984). **Embryology of Angiosperms**. Springer – Ver Berlin.
5. Maheshwari, P. (1950). **An Introduction to Embryology of Angiosperms**. Tata Mc Graw Hill, New York.
6. Shukla, A.K. (1999). **Biology of Pollen**. Atlas books & Periodica
7. Sporne, K.R. (1974). **The Morphology of Gymnosperms**, Hutchinson & Co. London.
8. Sundarajan, S. (1997) **College Botany Vol. II**. Himalaya Publication.
9. Swamy, B.G.L. **From Flower to Seed**.
10. Vashista, B.R. (1990) **Gymnosperms**. S. Chand & Co. Ltd., New Delhi.

B.Sc. IV Semester – Practical Question

Model Question Paper

Time – 3 HRS

Max Marks:- 30

- | | |
|--|----------|
| 01. Identify & Classify Specimens A, B & C Giving reasons | 3 x 3 =9 |
| 02. Identify the slides D, E & F with reasons & labeled diagrams | 3 x 3 =9 |
| 03. Mount the endosperm/ embryo of specimen G & Comment. | 5 x 1 =5 |
| 04. Comment on H | 2 x 1 =2 |
| 05. Class Record & permanent slides | 3 + 2=5 |

Scheme of Valuation

1. Gymnosperms [Cycas, Pinus & Gnetum] (Materials) [Identification & Classification – 1 Mark
Reasons – 2 Marks]
2. One Gymnosperm slide & Two embryology slides [Embryology slides may include T.S. of Young
anther & mature anther, different stage of Embryo Sac developement i, e 2 nucleate, 4 nucleate &
organized or mature embryo Sac, Types of ovules, Types of Placentation & embryo] [Identification –
1 Mark, Diagram – 1 Mark & Reasons – 1 Mark]
3. Endosperm / Embryo Mounting (Temporary Micropreparation) (mounting – 3 Marks Comment
with diagram- 02 Marks)
4. Types of pollen grains (permanent slides) / Pollinia (permanent slide)
Section of ovary to observe placentation – Axile, Basal, Marginal,
Parietal – Temporary Micro Preparation.
Diagram – ½ Mark
Comment – 1 ½ Marks / Sectioning, slide preparation 1 ½ Marks,
Identify the type of Placentation with diagram – ½ Marks
1. Submission – 4 Free hand permanent slides of Gymnosperms /
Pollinia + class Record – (2+3) (Each slide – ½ Mark)

Model Question Paper

Semester IV

Paper IV [Gymnosperms and Embryology of Angiosperms]

Time:- 3 Hrs

Max Marks :- 60

I Answer the following by choosing the correct choice:

1 x 30 = 30

1. Coralloid roots are seen in
a) *Hibiscus* c) *Cycas* b) Fungus d) Algae
2. Male cone in *Cycas* is made of
a) Flowers c) Microsporophylls b) Ovules d) Megasporophylls
3. Pollen chamber is present in
a) Algae b) Stamen c) Embryo Sac d) Ovule of *Cycas*
4. *Pinus* is a
a) Cycad b) Conifer c) Angiosperm d) Pteridophyte
5. Ovuliferous scale is seen in
a) Megasporophyll of c) Male cone of *Gnetum Pinus* female cone m
b) Male cone of *Pinus* d) Female cone of *Gnetum*.
6. *Pinus* Shows
a) Pocket of Pollen grains b) No Pollen grains c) Pollinia d) Winged Pollen grains
7. *Gnetum* leaf resembles with
a) Dicot leaf b) Monocot leaf c) Fern leaf d) Moss leaf
8. Pavement Tissue is present in
a) Ovule of *Gnetum* b) *Cycas* ovule c) *Pinus* Ovule d) Angiosperm ovule
9. Cupules are seen in
a) Cone of *Cycas* b) Cone of *Pinus* c) Cone of *Gnetum* d) Angiosperm ovule
10. *Cycas* exhibits following fern character namely
a) Soral organization b) Naked seededness c) Ovules d) Absence of Vasculature
11. Microsporogenesis is production of
a) Microspores b) Megaspores c) Ovules d) Stamens
12. Endothelium of Anther wall in Angiosperms is
a) Multi layered b) A Nutritive Tissue c) Hygroscopic in nature d) Spore producing Tissue
13. Ubisch bodies are produced in
a) Archosporium b) Glandular or Secretary type c) Megaspore Mothercell d) Pollen grain of Tapetum
14. Nemece Phenomenon is about
a) Types of ovules b) Pollen Embryo sac c) Types of Pollen grains d) Types of Placentations
15. NPC System is
a) Number, Position & Characterization c) Types of Megaspores of Pollen grain
b) Types of endosperm d) Types of Embryo Sac
16. 180° Curvature is seen in
a) Anotropous Ovule b) Orthotropous ovule c) Amphitropous ovule d) Circinotropous ovule

17. Megaspороgenesis is production of
a) Endospores b) Conidiospores c) Microspores d) Megaspores
18. *Polygonum* type of Embryo Sac Comes under
a) Bisporic type b) Monosporic type c) Tetrasporic type d) Pentasporic type
19. Entry of the pollen tube in to the ovule through Micropyle is
a) Mesogamy b) Porogamy c) Chalazogamy d) Triple Fusion
20. Double Fertilization is
a) Syngamy only b) Triple Fusion only c) Somatic in nature d) Syngamy + Triple Fusion
21. Triple Fusion results in
a) Primary endosperm nucleus b) Zygote c) Embryo d) Embryosac
22. Free Nuclear is a type of
a) Embryo b) Endosperm c) Embryo Sac d) Type of Ovule
23. Mature Embryo is
a) Globular b) Horse – Shoe Shaped c) Cordate d) Torpedo Shaped
24. When Zygote cleaves and produces many embryos, it is
a) Cleavage Polyembryony b) Adventive Polyembryony c) Apomixis d) Polyspermy
25. In tissue culture, amorphous mass of cells is called
a) Totipotency b) Callus c) Callose d) Plantlet
26. Fusion of protoplast is
a) Somatic Hybridization b) Protomixis c) Somatic embryogenesis d) Somatogamy
27. On the basis of embryological differences, it can be easily justified that *Trapa* can be removed from
a) Santalaceae b) Euphorbiaceae c) Hydrocharitaceae d) Onagraceae
28. In Podostemaceae
a) Embryo Sac is absent b) Embryo is absent c) Endosperm is absent d) Pollen absent
29. Anther culture is useful in raising
a) Haploid plants from microspores c) Plants from Megaspores or pollen grains
b) Parthenocarpic fruits d) Polyploid fruits
30. Shoot formation in tissue culture refers to
a) Callogenesis b) Caullogenesis c) Organogenesis d) Rhizogenesis

II Answer any six of the following :-

5 X 6=30

1. With neat, labeled diagram, describe the L.S of mature ovule of *Cycas*
2. Describe the T.S of stem in *Pinus* with the help of neat, labelled diagram.
3. Give a comparative account of male & female cones in *Gnetum* with diagrams.
4. With the help of neat, labelled diagram, describe the Anther wall in Angiosperms.
5. Explain the development & structure of *Polygonum* type of embryo Sac in Angiosperms with the help of neat, labelled diagram.
6. Describe Double fertilization in angiosperms
7. Explain the Free Nuclear type of Endosperm in Angiosperms & add a note on Endosperm Haustorium.
8. What is Polyembryony? Describe the Adventive polyembryony in angiosperms.
9. Give a brief account on Nutrient Media in Tissue culture & add a note on MS Media.

V SEMESTER

PAPER V: TAXONOMY AND ECONOMIC BOTANY.

- UNIT I: CLASSICAL TAXONOMY :** Aim and Scope of taxonomy Relevance 45 hrs
of taxonomy to conservation, sustainable utilization of bio-resources, plant exploration and introduction of exotic species. 08 hrs
- Brief History of taxonomy, broad outline of classification proposed by Bentham and Hooker, Engler and Prantl and their relative merits and demerits. Species concept: Taxonomic hierarchy, species, genus and family
- UNIT II: BIOSYSTEMATICS:** Plant nomenclature, Binomial system, rules for nomenclature. Salient features of the International code of Botanical nomenclature. 10 hrs
- Brief account of Taxonomic evidence: Morphology, anatomy, palynology, cytology and phytochemistry Taxonomic Tools: Herbarium and its techniques, floras and their importance. Botanical survey of India and its functions, Green House and its importance. Botanical gardens and their importance, (one state level, one National level & one International level).
- (State: Lalbagh, National: Indian Botanical garden-Sibpur, Calcutta International: Royal Botanical Garden, Kew, England).
- Numerical taxonomy, bio-systematic applications of Computer.
- UNIT III: MONOCOTYLEDONOUS FAMILIES:** Study of the following families according to Engler and Prantl system of classification and plants with their economic importance, Commelinaceae, Arecaceae, Orchidaceae, Poaceae & Musaceae. 4 hrs
- UNIT IV: DICOTYLEDONOUS FAMILIES:** Study of the following families according to Engler & Prantl system of classification and plants with economic importance:- **Archichlamydeae:** Magnoliaceae, Annonaceae Brassicaceae, Capparidaceae, Rutaceae, Leguminoseae (Papilionaceae, Caesalpineae and Mimoseae) Apiaceae, Euphorbiaceae and Moraceae **Metachlamydeae:** Cucurbitaceae, Rubicaceae, Asteraceae, Asclepiadaceae, Convolvulaceae, Acanthaceae & Lamiaceae. 16 hrs
- UNIT V: ECONOMIC BOTANY:** Study of the following plants with Botanical names, family, part used and economic uses. 7 hrs

FOOD

Cereals and millets	Wheat, Rice, Jowar and Ragi
Pulses	Pigeonpea, Blackgram & Bengal gram
Edible oils	Groundnut, Coconut & Sesamum
Sugar and starch	Sugarcane, Beetroot, Potato and Tapioca.
Fibres	Cotton, Jute, and Coir
Paper and pulp	Bamboo, Eucalyptus
Beverages	Coffee, Tea, and Cocoa
Spices	Cardamom, Clove and Cinnamon
Timber	Teak, Rose wood
Medicinal	Phyllanthus, Ocimum, Catharanthus, Azardirachta & Aloe vera.

V SEMESTER
Paper V - PRACTICALS
TAXONOMY AND ECONOMIC BOTANY.

	Total Units 12
1. Modification of root, stem, and leaf.	01 Unit
2. Morphology: - Inflorescence, Racemose, Cymose, Mixed and Special types.	01 Unit
3. Fruits: Simple, fleshy, dry dehiscent and dry indehiscent, aggregate & multiple fruits.	01 Unit
4. Methods of identification of Plants with Technical terms.	01 Unit
5. Study of taxonomic characters of families included in theory (minimum one Genus from each family)	07Units
6. Study of economically important plants covered in theory to identify with Botanical names, families, parts used and Economic uses.	
7. Herbarium Techniques.	01 Unit
8. Study of local flora by arranging local collection trips.	
9. Submission of field report along with records	
10. Submission of Ten Herbarium of Plants included in theory.	

V SEMESTER
PAPER V: TAXONOMY AND ECONOMIC BOTANY.
PRACTICAL-V

Time: 3 hours

Max marks: 30

1. Assign the specimen A, B, and C to their respective families giving diagnostic features.	2x3=6
2. Describe D in technical terms, draw the floral diagram with floral formula.	4x1=4
3. Identify the specimens E, F, G, H and I with their morphological biological, and economic importance.	2x5=10
4. Record with field report	3+2=5
5. Submission	½x10=5

SCHEME

1. One Archichlamydeae, one Metachlamydeae, one Monocot (Identification ½ marks, Classification ½ mark. Diagnostic Features 01 mark)
2. Monocot/Dicot plant (Technical details 2marks, Floral diagram- 1marks, Floral formula 1mark)
3. Root/stem/leaf modification/inflorescence/fruit and /economic Importance. (Identification ½mark, diagram ½mark, description 1mark, for Economic importance, identification with family 1mark, parts use ½mark, economic uses ½mark)
4. Class Record -03 marks; Field Report 02 marks.
5. Submission of ten Herbarium of families studied- Herbarium -5 marks

REFERENCES

1. Dutta.S.C **Systematic Botany** Wiley Easter, New Delhi.
2. Ganguli & kar :**College Botany**. New Central book agency, Calcutta.
3. Lawrence G.H.M: **Taxonomy of Vascular plants**, Oxford & IBH publications NewDelhi
4. Jaques.H.E: **Plant families-How to know them**,IBS New Delhi.
5. Saxena.N.B& Saxen.S.**Plant taxonomy**, Pragathi Prakashan Meerat.
6. Stace.C.A : **Plant taxonomy& Biosystematics**, Cambridge University publication. USA.
7. Stebbins: **Flowering plants-evolution above the species level**, Arnold Pub. London.
8. Trivedi & Sharma: **Taxonomy of Angiosperm**, L.B Publications
9. Sharma O.P; **Plant Taxonomy**, Tata McGraw, Hill Publishing co, Ltd, New Delhi, India.
10. Singh.V.& D.K.Jain: **Taxonomy of Angiosperms**, Rastogi Publication, Meerut, India.
11. Subramanya N.S.: **Laboratory Manual of Plant Taxonomy** Tata Me Graw Hill Publishing Co, New Delhi.
12. Gamble.T.S: **Flora of Presidency of Madras**.
13. Radford, A.E: **Fundamental of Plant Systematics** Warper & Row Publications. USA.
14. Hill: **Economic Botany**.Tata McGraw Hill, New York.
15. Kumar.H.D. **Economic Botany**.
16. Pandey: **Economic Botany**. S.Chandra & Co Publication
17. Sambamurthy A.V.S.S & Subramanyam, **A Text book of Economic Botany**, Wiley Eastern Pub, New Delhi

Model Question Paper

[Paper – V TAXONOMY AND ECONOMIC BOTANY]

Time:- 3 Hrs

Max Marks :- 60

I. Answer the following by choosing the correct choice:

30x1=30

1. Botanical name of the Coconut Plant is:-
 - a) *Oryza sativa*
 - b) *Brassica oleracea*
 - c) *Cocos nucifera*
 - d) *Mangifera indica*
2. The largest family among the Diocotyledoneae is:-
 - a) Rubiaceae
 - b) Asteraceae
 - c) Cucurbitaceae
 - d) Amaranthaceae
3. Epigynous, gamopetalous family is :-
 - a) Rutaceae
 - b) Asteraceae
 - c) Annonaceae
 - d) Lamiaceae
4. Tetramerous flowers are seen in the gamopetalous family of :-
 - a) Brassicaceae
 - b) Rubiaceae
 - c) Rutaceae
 - d) Amaranthaceae
5. The condition of androecium in Cucurbitaceae is:-
 - a) Polyandrous
 - b) Synandrous
 - c) Diadelphous
 - d) Syngenesious
6. Fruit, Cucurbitaceae is:-
 - a) Pepo
 - b) Hesperidium
 - c) Pome
 - d) Samara
7. Polypetalous irregular corolla is seen in:-
 - a) Rosaceae
 - b) Papilionaceae
 - c) Lamiaceae
 - d) Brassicaceae
8. Gynobasic style is characteristic of the family:-
 - a) Lamiaceae
 - b) Compositae
 - c) Solanaceae
 - d) Papilionaceae
9. Bicarpellary ovary with parietal placentation is found in:-
 - a) Lamiaceae
 - b) Brassicaceae
 - c) Solanaceae
 - d) Magnoliaceae
10. Cleistogamous flower is seen in :-
 - a) Annonaceae
 - b) Rutaceae
 - c) Cucurbitaceae
 - d) Commelinaceae
11. In Sugarcane inflorescence is a :-
 - a) Spike
 - b) Panicle
 - c) Catkin
 - d) Verticillaster
12. Tetradyamous condition of androecium is one of the striking features of :-
 - a) Papilionaceae
 - b) Brassicaceae
 - c) Rubiaceae
 - d) Cucurbitaceae

13. In *Cocos nucifera* the fruit is a :-
 a) Berry c) Drupe
 b) Capsule d) Pepo
14. The Botanical name of Pigeonpea is:-
 a) *Pisum sativum* c) *Cajanus cajan*
 b) *Glycine max* d) *Phaseolus mungo*
15. Caryopsis is the characteristic fruit of :-
 a) Poaceae c) Rutaceae
 b) Asteraceae d) Acanthaceae
16. When plant has aromatic stem, superior bicarpellary syncarpous ovary belongs to:-
 a) Cucurbitaceae c) Solanaceae
 b) Lamiaceae d) Orchidaceae
17. Pseudostem, spadix inflorescence, tricarpellary syncarpous inferior ovary is the characteristic feature of :-
 a) Poaceae c) Musaceae
 b) Orchidaceae d) Moraceae
18. Seeds of *Arachis hypogea* yields :-
 a) Ganja c) Sugar
 b) Edible cake d) Oil
19. Which of the following is cereal:-
 a) Blackgram b) Sesamum
 c) Wheat d) Groundnut
20. Which of the following yield starch:-
 a) Jowar c) *Phyllanthus*
 b) Tapioca d) *Aloe vera*
21. Rose wood yields:-
 a) Spice c) Beverage
 b) Timber d) Paper pulp
22. Binomial system of nomenclature means that organism has:-
 a) Two names one popular and another scientific
 b) One name given by two Botanists
 c) Two names one in Latin and another in English
 d) One name comprising of genus and another of species
23. The phylogenetic system refers to :-
 a) The grouping according to all morphological characters
 b) The grouping of plants in order of their increasing complexities.
 c) The grouping according to evolutionary trends.
 d) The grouping according to floral similarities.
24. Genus is a group of similar and related -
 a) Families b) Species c) Orders d) Genera
25. The Families having common character constitutes a :-
 a) Class b) Phylum c) Sub-Class d) Order

26. The science of Cytotaxonomy is based on-
- Shape and size of cell
 - Cell organelles
 - Cytochrome "C"
 - Chemical composition of Cytoplasm
27. In Engler and Prantl's system of classification
- Monocot precedes dicots
 - Dicots precedes monocots
 - Gymnosperms are in between dicot and monocots
 - Gymnosperms after monocots and dicots.
28. Indicate which one of the following statements, does not apply to the family Poaceae.
- Fistular stem
 - Inflorescence spikes
 - Gynoecium bicarpellary
 - Ovary with two feathery stigmas
29. Taxonomic category in taxonomic hierarchy which end with-ales is:-
- Family
 - Order
 - Class
 - Species
30. The Botanical name of Sitapal is:-
- Artabotrys uncinatas*
 - Michelia champaka*
 - Annona squamosa*
 - Polyalthia longifolia*

II. Answer any six of the following

6x5=30

- Give a brief account on Bentham & Hooker system of classification.
- Explain the acts & principles of ICBN.
- Write short notes on Cytotaxonomy.
- Write salient features of Orchidaceae.
- Mention the diagnostic characters of family Asclepiadaceae.
- Give a comparative account of Androecium & Gynoecium in Lamiaceae & Acanthaceae.
- Mention the economic importance of any two spices you have studied.
- Discuss the importance of a national level Botanical garden.
- Describe the floral characters of Papilionaceae.

V SEMESTER

PAPER VI-CYTOLOGY, GENETICS, EVOLUTION AND PLANT BREEDING

- UNIT I:** **HISTORY OF CYTOLOGY:** Cell as a fundamental unit of life and organism – modern concepts. Microscopy : Light, fluorescent and electron microscope. Live imaging techniques for studying cell and tissues. **45 Hrs**
3 Hrs
- UNIT II:** **CHROMOSOME BIOLOGY :** Structure of eukaryotic chromosome; centromere, kinetochore and telomere. **10 Hrs**
Nucleosome and its importance in the organisation of eukaryotic chromosome. Types of Chromosomes; biarmed and holocentric types. Numerical changes in chromosome number, polyploidy and aneuploidy – trisomics and monosomics. Karyotype concept and its relevance in the genomic era; c-value and genome size. Euchromatin and heterochromatin.
- UNIT III:** **CELL DIVISION :** Discovery; cell cycle and its regulation with reference to cell division. Mitosis : phases, significance in growth and development and in cancer–Apoptosis (PCD). **10 Hrs**
Meiosis – phases – significance in gametogenesis in plants. Chromosomal aberrations manifested during meiosis - Deficiency, duplication, translocation and inversion.
- UNIT IV:** **GENETICS:** Introduction: Gregor Mendel – his life and contribution to genetics. Genotype and phenotype. Law of dominance, segregation of genes, Independent assortment of genes. Incomplete dominance, Interaction of genes – supplementary and complementary factors. Epistasis, multiple factor inheritance; linkage and crossing over. **12 Hrs**
POST MENDELIAN GENETICS
Gene concept and Chromosomal basis of heredity. Extra chromosomal inheritance : Plasmid DNA, chloroplast & mitochondrial inheritance, Cytoplasmic male sterility and its role in hybrid seed production. Genetic problems in relation to topics in Unit 4.
- UNIT V:** **EVOLUTION :** Theories of Darwin, DeVries and Lamarck; modern concepts of evolution – 2 R Hypothesis: evolution by gene duplication; modern synthesis. “Big Bang” theory **10 Hrs**
PLANT BREEDING : Aims & objectives of plant breeding – a historical account. Basic techniques of plant breeding. Vegetative propagation methods – Cutting, grafting, layering, gootee, cloning Intergeneric and interspecific hybridization, maintenance of germplasm, pollen banks, quarantine methods.

V SEMESTER- PRACTICAL PAPER VI
PAPER VI-CYTOLOGY, GENETICS, EVOLUTION AND PLANT BREEDING

Total Units 12

1	Preparation of cytological stains – Aceto carmine, Aceto orcein and Feulgen’s stain.	01 Unit
2	Mitosis from Allium root tips–Aceto carmine and Feulgen’s techniques.	02 Units
3	Meiosis from Allium flower buds.	02 Units
4	Salivary gland chromosomes of Drosophila or Chironomous larvae.	01 Unit
5	Karyotype and Idiogram : Camera Lucida drawing.	01 Unit
6	Permanent slides of Mitosis.	01 Unit
7	Permanent slides of Meiosis.	01 Unit
8	Emasculation and bagging of the flower buds of Cassia / Peltophorum.	01 Unit
9	Genetic problems and laboratory mind teasers.	02 Units
10	Submission : Record and Slides: two Mitosis, two Meiosis and one Salivary gland chromosomes.	

REFERENCES

1. Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts and Peter Walter (2007): **Molecular Biology of the Cell** : 5th Edn. 2007; Garland Science Text Book. 1392pp 1526 illustrations. Package with Media DVD.
2. Botter, **Text Book of Genetics**, L.B. Publications.
3. Chahal, **Principles and Procedures of Plant Breeding**, L.B. Publications.
4. Gopalakrishnan, T.S., Itta Sambasivaiah & Kamalakar Rao, **Principles of Organic Evolution**.
5. Gupta, P.K. **Cytology, Genetics & Evolution**, Rastogi Publication.
6. Hughes, **Plant Molecular Genetics** L.B. Publications.
7. Klug, **Concept of Genetics** 7th Edn. L.B. Publications.
8. Peter snustad, D and Michael J. Simmons (2006) **Principles of Genetics** 4th Ed, Wiley & Sons, INC.
9. Sinha and Sinha : **Cytogenetics, Plant Breeding & Evolution** Vikas Publications.
10. Sinnot, E.W., Dunn, L.C. & Dobzonsky, T. (1958) **Principles of Genetics** 1958. Tata MacGraw Hill, New York.
11. Stickburger, M. (1990) **Genetics** 3rd Edn. 1990. MacMillan Publishing Company.
12. Susumu Ohno (1970) : **Evolution by Gene Duplication** : 4th Edn. 2004; Springer 1970.

**V SEMESTER
PAPER VI - CYTOLOGY, GENETICS, EVOLUTION AND PLANT BREEDING PRACTICAL
QUESTION PAPER**

Time : 3 Hrs.

Max. Marks : 30

1.	Prepare a temporary mitotic slide from material A ; identify the stage with diagram.	6
2.	Prepare a temporary meiotic slide from material B ; identify the stage with diagram.	6
3.	Identify and comment on C along with a sketch.	3
4.	Identify and comment on slides D and E with suitable sketches.	3+3
5.	Solve the Genetic Problem F	4
6.	Submission of record and slides	2½+2½

SCHEME OF VALUATION

1. Preparation – 4 marks, identification of stage – 1 mark and diagram – 1 mark.
2. Preparation – 4 marks, identification of stage – 1 mark and diagram – 1 mark.
3. Karyotype - slide or sketch / Salivary gland Chromosomes – slide or sketch. Sketch – 1
mark, identification – ½ mark , comment 1 ½ marks
4. One slide from mitosis and one slide from meiosis. Identification - ½
mark, sketch – ½ mark, comment – 2 marks.
5. Genetic problems from
 - i. Dihybrid cross and test cross
 - ii. Incomplete dominance
 - iii. Complementary factors
 - iv. Supplementary factors
 - v. Epistasis.
6. Submissions : 2 Mitotic and 3 Meiotic permanent slides – 2 ½ marks.
Class Record – 2 ½ marks.

MODEL QUESTION PAPER

V Semester Paper VI

Cytology, Genetics, Evolution and Plant Breeding

Time : 3 Hrs.

Total Marks: 60

I. Answer the following by choosing the correct choice:

30 X 1 = 30

1. The word "cell" was first coined by
 - a) Robert Hooke
 - b) Hugo von Mohl
 - c) Purkinje
 - d) Robert Brown
2. The name "protoplasm" was given by
 - a) Robert Hooke
 - b) Hugo von Mohl
 - c) Purkinje
 - d) Robert Brown
3. The Cell theory was proposed by
 - a) Robert Brown
 - b) Schleiden and Schwann
 - c) Robert Hooke
 - d) Rudolf Virchow
4. The presence of chromosomes in the cells was first noticed by
 - a) Waldeyer
 - b) Flemming
 - c) Hofmeister
 - d) Strasburger
5. The term "chromosome" was first used by
 - a) Hofmeister in 1848
 - b) Flemming in 1879
 - c) Strasburger in 1875
 - d) Waldeyer in 1888
6. The Chromosome theory of Inheritance was first proposed by
 - a) Gregor Mendel
 - b) Sutton and Boveri
 - c) Beadle and Tatum
 - d) Johansen
7. The compound microscope was first invented by
 - a) Anton von Leuwenhoek
 - b) Robert Hooke
 - c) Zacharias Jensen
 - d) All the three
8. For observation under electron microscope the specimen must be
 - a) Dry and dead
 - b) Dry and living
 - c) Wet and living
 - d) Wet and dead
9. The non-stainable gap between the two arms of a chromosome is called
 - a) Kinetochore
 - b) Primary constriction
 - c) Centromere
 - d) b and c
10. During metaphase the attachment of spindle fibres takes place on
 - a) Telomere
 - b) Kinetochore
 - c) Centromere
 - d) Secondary constriction
11. A chromosome with terminal centromere is called
 - a) Metacentric
 - b) Acentric
 - c) Acrocentric
 - d) Telocentric

12. The Nucleosome model for ultra structure of chromosomes was proposed by
 - a) C L F Woodcock
 - b) Both a & b
 - c) R.D. Kornberg
 - d) Balbiani
13. The 2009 Nobel Prize in medicine has been awarded for the work on
 - a) Ribosome
 - b) Telomere
 - c) Kinetochore
 - d) Centromere
14. The lowest diploid number of $2n = 2$ has been reported in
 - a) *Drosophila melanogaster*
 - b) *Ophioglossum reticulatum*
 - c) *Ascaris megalocephalus*
 - d) *Haplopappus gracilis*
15. The highest haploid number of $n = 631 + 10$ fragments has been recorded in
 - a) *Drosophila melanogaster*
 - b) *Ophioglossum reticulatum*
 - c) *Ascaris megalocephalus*
 - d) *Haplopappus*
16. Any increase or decrease in chromosome number that affects one or two chromosomes in the complement is called
 - a) Monoploidy
 - b) Aneuploidy
 - c) Diploidy
 - d) Polyploidy
17. Aneuploidy in which the change in chromosome number is expressed as $2n + 1$ is called
 - a) Monosomics
 - b) Trisomics
 - c) Nullisomics
 - d) Tetrasomics
18. The centromere in a chromosome represents
 - a) Euchromatic region
 - b) Genetically inert region
 - c) Heterochromatic region
 - d) b & c
19. The karyotype represents the somatic chromosome complement seen in
 - a) Prophase
 - b) Anaphase
 - c) Metaphase
 - d) Telophase
20. Replication of chromosomes in cell cycle takes place during
 - a) G-1 phase
 - b) S-Phase
 - c) G-2 phase
 - d) Interphase
21. Crossing over in Meiosis - I occurs during
 - a) Leptotene
 - b) Pachytene
 - c) Zygotene
 - d) Diplotene
22. The pairing of homologous chromosomes in Meiosis - I is facilitated by
 - a) Golgi complex
 - b) Synoptenomal complex
 - c) Chromosomal complex
 - d) Gene complex
23. The chromosomal aberration that affects atleast two chromosomes during meiosis is called
 - a) Duplication
 - b) Translocation
 - c) Inversion
 - d) Deletion
24. The term "Genetics" was proposed by
 - a) Gregor Mendel in 1866
 - b) Charles Darwin in 1858
 - c) Bateson in 1906
 - d) Watson and Crick in 1953

25. The genetic constitution that an organism receives from its parents is called
a) Phenotype c) Genotype
b) Ecotype d) D N A finger print
26. In a cross between red flowered 4 O' clock plant with the white flowered one, the F₂ ratio is 1:3:1 between red, pink and white. Therefore it is
a) Monohybrid cross c) Dihybrid cross
b) Incomplete dominance d) Epistasis
27. Darwin's theory of evolution is based mainly on
a) Struggle for existence b) Natural selection c) Variations d) All the three
28. The modern concept of evolution is referred to as
a) Molecular evolution c) Evolution by Gene Duplication
b) R Hypothesis d) b & c
29. "Father of Green Revolution" in India is
a) M.S. Swaminathan c) Norman Borlaug
b) Hargobind Khorana d) Ragi Lakshmanaiah
30. The hybrid wheat variety produced by Dr. M.S. Swaminathan was named as
a) Sonora 64 c) Lerma Rojo
b) Sharbati Sonora d) Shera

II ANSWER ANY SIX OF THE FOLLOWING

6 X 5 = 30

1. What is cell theory? Explain a modern concept of cell as a fundamental unit of life and organism.
2. Describe the construction and working of the electron microscope (SEM or TEM)
3. Explain the ultrastructure of eukaryotic chromosome with a neat labelled sketches.
4. What is polyploidy? Differentiate between autopolyploidy and allopolyploidy with examples.
5. Describe the important stages of prophase-I of meiosis.
6. What is reciprocal translocation? Explain its effects on inheritance of characters in plants.
7. Explain supplementary factor inheritance with an example.
8. What is artificial selection? Explain any two types of artificial selections in plant breeding.
9. Discuss de Vries' theory of organic evolution.

VI SEMESTER

PAPER VII: Molecular Biology, Genetic Engineering & Plant Physiology – 1.

45 Hrs

- UNIT I:** **Molecular Biology** Introduction, discovery, chemical nature & replication of genetic material, genetic code, non genetic RNA, Biosynthesis of proteins, Regulation of gene action in prokaryotes & eukaryotes. **8 hrs**
- UNIT II:** **Genetic Engineering & Biotechnology** A Concise account of methods used in 'Recombinant DNA' technology, Gene libraries, screening of Genomic DNA library, application of genetic engineering technology in agriculture. A brief account on hazards & safe guards of genetic engineering technology with special reference to Bt crops. A brief account of Bioinformatics and its uses
Microbial Biotechnology: Uses of microbes in Industry & agriculture. Fermentation - production of Ethanol, production of Enzymes–Amylases. Production of antibiotics–Penicillin. **15 hrs**
- UNIT III:** **Plant Physiology - Water relations:** Importance of water, Diffusion, Osmosis, Water potential, Osmotic Potential, Membrane & their permeability. **8 hrs**
Absorption of water– Mechanisms of water absorption, factors affecting rate of water absorption
- UNIT IV:** **Mechanism of ascent of Sap** – Vital and Physical force theories : **6 hrs**
Transpiration – Loss of water, Types, Mechanism, Stomatal Dynamics, Stomatal Mechanism, Significance, Factors affecting transpiration, anti - transpirants, Guttation.
- UNIT V:** **Mineral nutrition in plants** – Major & Minor Elements , their deficiency symptoms in plants **8 hrs**
Phloem transport- Transport of organic solutes. Path of transport, Vein loading and unloading. Transcellular or streaming hypothesis, contractive protein hypothesis, mass flow hypothesis, electro osmosis), Source – Sink concept

REFERENCES

1. Buchanan, B.B, Gruissem, W. and Jones, R.L. 2004. **Biochemistry and Molecular Biology of plants**. I.K. International PVT., New Delhi,
2. Dey and Harborne, J. B. (Eds.) 1977. **Plant Biochemistry**. Academic Press, New York.
3. Hall, D.O. and Rao, K.K. 1999. **Photosynthesis**. 6th edition, Published in association with the Institute of Biology, Cambridge University Press. Cambridge, U.K.
4. Harborne, T. C. 1981. **Phytochemical Methods: A Guide to Modern Techniques of Plant Analysis**. Chapman & Hall, London.
5. Lodish, Berk, Matsudaira, Kaiser, Kriega, Scott, Zipursky Darnell. (2004). **Molecular cell Biology Fifth Edition**, W. H. Freeman and company, New York.
6. Moore, T.C. 1989. **Biochemistry and physiology of Plant Hormones**. 2nd edition. Springer – Verlag, New York, USA.
7. Moore, T.C. 1974. **Research Experiences in Plant Physiology: A Laboratory Manual**. Springer. Verlag, Berlin.
8. Peter snustad, D and Michael J. Simmons (2006) **Principles of Genetics**. 4th Ed. Wiley & Sons-INC.
9. Plummer, D.T. 1988. **An Introduction to Practical Biochemistry**. Tata McGraw-Hill Pub. Co. Ltd., New Delhi.
10. Singhal, G.S., Renger, G., Sopory, S.K., Irrang, K.D. and Govindjee. 1999. **Concepts in Photobiology: Photosynthesis and Photomorphogenesis**. Narosa Publishing House, New Delhi.
11. Stumpf, P.K. and Conn, E.E. (eds.) 1988. **The Biochemistry of Plants- A Comprehensive treatise**. Academic Press, New York.
12. Taiz L & Zeiger E. 1998. **Plant Physiology**. 2nd Edn. Sinauer Associates, Inc., Publishers, Massachusetts, USA.
13. Taiz, L. & Zeiger, E. 2003. **Plant Physiology**. 3rd edition. Panima Publishing Corporation, New Delhi/ Bangalore.
14. Thomas, B. and Vince- Prue, D. 1997. **Photoperiodism in plants**. 2nd edition. Academic Press, San Diego, USA.
15. Wilkins M.B.(eds.) 1989. **Advanced Plant Physiology**. Pitman publishing Ltd., London
16. Wilson, K and Goulding, K.H. (Eds.). 1986. **A Biologists Guide to Principles and Techniques of practical Biochemistry**. Edward Arnold, London, UK.

VI SEMESTER
PAPER VII: Molecular Biology, Genetic Engineering & Plant Practical
12 Units

1	Qualitative tests for starch, protein and reducing sugars.	02Units
2	Determination of osmotic potential of cell sap by plasmolytic method.	01 Unit
3	Determination of Stomatal Index .	01 Unit
4	Structures of stomata in hydrophytes, mesophytes and xerophytes	01 Unit
5	Streaming of protoplasm to show cyclosis	01 Unit
6	Determination of pH of plant samples by using indicators	01 Unit
7	Study of deficiency symptoms – Chlorosis, Necrosis. Hydroponics	03Units
8	Study of phloem transport by ringing experiment.	01 Unit
	Visit to Bioinformatics/ Molecular Biology Laboratory	

VI - Semester Practical Question Paper
PAPER VII: Molecular Biology, Genetic Engineering & Plant Physiology - I

Time ; 3 Hours

Max Marks : 30

01.	Conduct the biochemical test of the sample 'A'	5
02.	Determine the osmotic potential of cell sap by plasmolytic method stomatal index material B	7
03.	Determine the pH of the given sample C	2
04.	Comment on experiment D & E	3+ 3
05.	Class Record + Submission (Tour Report)	5 + 5

Scheme of Valuation

1. Samples – Starch, Protein & Reducing sugar (Positive test- 2 marks; Negative test – 3 marks)
2. (Conducting the experiment – 2 marks; Principle –2 marks; Procedure –1 marks; Result – 2 Marks)
3. Extract from Root, Stem Leaves of a plant to be given (Determination of pH- 1 mark; Comment – 1 marks)
4. Experiments:
 - a. Streaming of protoplasm
 - b. Suction force due to transpiration
 - c. Mineral deficiency
 - d. Mass flow hypothesis
 - e. Ringing experiment
 - f. Hydroponics
 (Identification – 1 mark; Comment –2 marks)
5. Class Record – 5 marks

MODEL QUESTION PAPER

VI - Semester

PAPER VII: Molecular Biology, Genetic Engineering & Plant Physiology - I

I. Answer the following by choosing the correct choice:

1 x 30 = 30

1. The diameter of z-DNA is
a. 20A° b. 45 A° c. 18 A° d. 34 A°
2. Nucleoside consists of
a. Sugar + phosphate c. Sugar + purine + phosphate
b. Sugar + pyrimidine + phosphate d. Sugar + pyrimidine + purine
3. Single stranded DNA molecules are found in
a. TMV b. Rose sarcoma virus c. Small pox virus d. Bacteria
4. The 'C' value of DNA refers to
a. Total amount of DNA per haploid genome b. Total amount of DNA per Somatic cell.
c. Total amount of DNA present in heterozome d. Total amount of DNA present in Autosome
5. Plasmids are
a) Viruses c. Extra chromosomal genetic element of bacteria
b) New type of microorganisms d. Genetic element of bacteria
6. The term Bt refers to
a. *Bacillus thuringiensis* c. Bacterial transformation
b. Bacterial transcription d. Bacillus transformation
7. Okazaki fragment are produced during
a. DNA synthesis b. Protein synthesis c. RNA synthesis d. Protein metabolism
8. DNA which is transformed synthetically using enzymes is
a. Recombinant DNA b. DNA c. Complementary DNA d. RNA
9. Osmosis is possible through
a. Permeable membrane b. mpermeable membrane c. Semi-permeable membrane d. Membrane
10. Loss of water in the liquid form from the aerial parts of the plant is
a. Guttation b. Evaporation c. Transpiration d. Respiration
11. Phloem transport can be detected through
a. Microscope b. Telescope c. Autoradiography d. Radiography
12. In protoplast fusion technique which of the following enzymes are used
a) Cellulase & Pectinase b. Amylase & Pectinase c. Lipase & Pectinase d. Amylase & Lipase
13. Antibiotics are mostly obtained from
a) Viruses b. Cyanobacteria. c. Actinomycetes. d. Algae.
14. A cell becomes turgid when placed in
a. Isotonic solution b. Hypotonic solution c. Hypertonic solution d. Acidic solution
15. Loss of water from the aerial parts of plant in the form of water vapour is called
a. Guttation b. Transpiration c. Evaporation d. Respiration
16. The main force behind passive absorption of water by roots is
a. Root pressure b. Transpiration pull c. Osmotic pressure d. Evaporation

17. The diffusion of solvent molecules into the solution through a semi-permeable membrane is
 - a. Imbibition
 - b. Diffusion
 - c. Osmosis
 - d. Evaporation
18. Water potential is expressed in SI units as
 - a. Atmospheres
 - b. Bars
 - c. Pascals
 - d. Grams
19. Stomata open in the night in
 - a. C₃ Plants
 - b. C₄ Plants
 - c. CAM Plants
 - d. Hydrophytes
20. DPD equals
 - a. OP - TP
 - b. OP + WP
 - c. TP - OP
 - d. OP + TP
21. Active absorption of water by roots from soil is mostly affected by
 - a. Tension in cell sap due to transpiration.
 - b. Osmotic concentration of cell sap.
 - c. Sucking power of root hair.
 - d. Typical tissue organisation.
22. The Soil water that is available for plants is
 - a. Capillary water
 - b. Hygroscopic water
 - c. Gravitational water
 - d. Chemically bound water
23. Pulsation theory to explain Ascent of sap was proposed by
 - a. Dixon and Jolly
 - b. J.C. Bose
 - c. Curtis and Clark
 - d. Clark
24. Root pressure is maximum when
 - a) Transpiration is high and absorption is very low
 - b) Transpiration is low and absorption is very high
 - c) Transpiration is high and absorption is very high
 - d) Transpiration is low and absorption is very low
25. The cohesive force between molecules of water contributes to
 - a. Osmosis
 - b. Translocation
 - c. Plasmolysis
 - d. Ascent of sap
26. The apparatus used to measure root pressure
 - a. Photometer
 - b. Manometer
 - c. Auxanometer
 - d. Barometer
27. Which of the following is a micronutrient
 - a. Mn
 - b. N
 - c. Mg
 - d. Ca
28. Chlorosis occurs due to
 - a. Strong light
 - b) Excessive respiration
 - c. Darkness
 - d. Deficiency of Iron or Mg
29. Iron deficiency causes
 - a. Necrosis in old leaves
 - b. Dwarfness
 - c. Defoliation
 - d. Interveinal chlorosis in young leaves
30. Plants absorb Zn in the form of
 - a. Zinc Sulphate
 - b. Zinc phosphate
 - c. Zinc nitrate
 - d. Zinc Borate

II Answer any six of the following

6 x 5

1. Explain regulation of gene action in Eukaryotes
2. Explain cloning vectors
3. Explain cDNA Library.
4. Describe the process of Penicillin production.
5. Explain factors affecting rate of water absorption in plants
6. Describe the process of vein loading
7. Describe the mechanism of Transpiration in plants
8. Explain the role of minor elements in plant nutrition.

I SEMESTER
PAPER VIII –Plant Physiology – II

UNIT I:	Enzymes: Nomenclature, classification, chemical composition, prosthetic groups, Coenzymes, Cofactors, Vitamins, properties of enzymes, Mechanism of enzyme action, Enzyme kinetics, factors affecting enzyme activity, Inhibition of enzyme action (Competitive; Non Competitive, feedback), Allosteric enzymes. Nitrogen Metabolism: Sources of nitrogen, nitrogen fixation, <i>nif</i> genes, nitrate metabolism, Assimilation of ammonia, Synthesis of Amino acids and Nitrogen cycle.	45 hrs 10hrs
UNIT II:	Photosynthesis – Introduction, ultra structure of the chloroplast, photosynthetic apparatus, Principles of light absorption, Emerson's enhancement effect, photosystems I & II, Light reaction –Hill reaction, mechanism of electron and proton transport, Photophosphorylation (cyclic, non-cyclic and pseudocyclic), Carbon reactions (Calvin Cycle, C ₄ – Pathway, CAM), Factors affecting the process. Photorespiration – Organelles involved, mechanism and significance. Analytical techniques: A brief account of Colorimetry, Chromatography, Electrophoresis, Tracer Technique and Autoradiography.	10hrs
UNIT III:	Respiration – Introduction, Mechanism of aerobic respiration – glycolysis, TCA cycle, ETS and Oxidative phosphorylation, mechanism of anaerobic respiration (Alcoholic Fermentation and Lactic acid Fermentation), Pentose phosphate pathway, Respiratory Quotient and its significance, factors affecting respiration.	7 hrs
UNIT IV:	Plant growth and Growth regulators – Definition of growth, kinetics, Factors affecting growth; Phytohormones: Discovery, metabolism, Physiological effects, mode of action of auxins, gibberellins, cytokinins, ethylene and ABA. Application of these hormones in agriculture and horticulture. Plant movements – A brief account on the classification and types of movements.	8 hrs
UNIT V:	Photobiology: A brief account of dormancy, Photoperiodism, Phytochrome and its role, Florigen concept, Vernalization, biological clock and Circadian Rhythms. Stress physiology: Water stress, heat stress, salt stress and mechanisms of plant response to water and related stresses. Defence mechanism: A brief account of secondary metabolites (Phenolics, Flavonoids and alkaloids) and their role in plant defence.	10 hrs

References

1. Buchanan, B.B, Gruissem, W. and Jones, R.L. 2004. **Biochemistry and Molecular Biology of plants**. I.K. International PVT., New Delhi,
2. Dey and Harborne, J. B. (Eds.) 1977. **Plant Biochemistry**. Academic Press, New York.
3. Hall (1980), **Photosynthesis** 4th Ed. Atlas Publishers, New Delhi
4. Hall, D.O. and Rao, K.K. 1999. **Photosynthesis**. 6th edition, Published in association with the Institute of Biology, Cambridge University Press. Cambridge, U.K.
5. Harborne, T. C. 1981. **Phytochemical Methods: A Guide to Modern Techniques of Plant Analysis**. Chapman & Hall, London.
6. Hopkins, W.G. (1995). **Introduction to Plant Physiology**, John Wiley & Sons, New York.
7. Moore, T.C. 1989. **Biochemistry and physiology of Plant Hormones**. 2nd edition. Springer – Verlag, New York, USA.
8. Moore, T.C.1974. **Research Experiences in Plant Physiology: A Laboratory Manual**. Springer. Verlag, Berlin.
9. Muheyi, S and Ghosh, A.K. (2005) **Plant Physiology** New Central Book Agency (P) Ltd. 8/1 Chintamani Das Lane, Kolkata 200009. Indu

10. Plummer, D.T. 1988. **An Introduction to Practical Biochemistry**. Tata McGraw-Hill Publishing Co. Ltd., New Delhi.
11. Purohit, S.S (2009) **Biochemistry – Fundamentals and Applications**. Gobies (India)
12. Rabinowitch & Govindjee. **Photosynthesis**(1984).
13. Salisbury and Ross. (2005) **Plant Physiology**, Thomson wads worth.
14. Singhal G.S., Renger G., Sopory S.K., Irrang K.D. & Govindjee 1999. **Concepts in Photobiology: Photosynthesis & Photomorphogenesis**. Narosa Pub. House, New Delhi.
15. Stumpf, P.K. and Conn, E.E. (eds.) 1988. **The Biochemistry of Plants- A Comprehensive treatise**. Academic Press, New York.
16. Sunderajan, S. (1997). **College Botany Vol. III.**, Himalaya Publication.
17. Taiz and Zeiger (2004) **Plant Physiology 3rd Ed.** Panima Publishing Coporation New Delhi / Bangalore.
18. Taiz C. & Zeiger E(1998) **Plant Physilogy. 2ndEd.** Sinauer Associates, Inc., Publishers, Massachusetts, USA
19. Taiz, L. and Zeiger, E. 2003. **Plant Physiology. 3rd edition.** Panima Publishing Corporation, New Delhi/Bangalore.
20. Thomas B. & Vince-Prue D.1997. **Photoperiodism in plants.** 2nd Ed. Academic Press, San Diego, USA.
21. Wilkins, M.B. (eds.). 1989. **Advanced Plant Physiology.** Pitman publishing Ltd., London.
22. Wilkins. (1998). **Advanced Physilogy**, ELBS, Longman.
23. Wilson, K and Goulding, K.H. (Eds.). 1986. **A Biologists Guide to Principles and Techniques of practical Biochemistry.** Edward Arnold, London, UK.

VI SEMESTER

Practical Paper VIII –Plant Physiology

	Total Units 12
1. Estimation of chlorophyll by colorimetric analysis	02 Units
2. Separation of photosynthetic pigments by paper chromatography and measurement of Rf values.	01 Unit
3. Determination of rate of photosynthesis at different wavelengths of light.	01 Unit
4. Determination of rate of photosynthesis at different concentrations of CO ₂ .	01 Unit
5. Estimation of Ascorbic acid content in a plant sample	01 Unit
6. Determination of RQ of carbohydrates, fats and proteins.	01 Unit
7. Effect of phytohormones on plant growth (Bioassays)	03 Units
8. Study of geotropism, phototropism and hydrotropism.	02 Units
9. An Industrial visit to study the manufacture of alcohol / antibiotics / enzymes	

VI SEMESTER

PAPER VIII –Plant Physiology – II

Time 3 Hrs

Max Marks: 30

- | | |
|---|-------|
| 1. Separate the Photosynthetic pigments from sample A by paper chromatography and measure their Rf values | - 7 |
| 2. Estimate the ascorbic content in the sample B | - 7 |
| 3. Comment on Experiments C & D | - 6 |
| 4. Class Records & Field report | - 5+5 |

Scheme of Valutaion

1. Requirements – 1 Mark, Principle – 2 Marks, Procedure and Conducting the experiment – 2 Marks, Rf Values – 2 Marks
2. Requirements – 1 Mark, Principle – 1 Mark, Procedure and Conducting the experiment – 3 Marks, Result – 2 Marks)
3. Experiments
 - a) Photosynthesis at different wave lengths of light
 - b) Respirometer experiment for RQ
 - c) Anaerobic respiration
 - d) Hydrotropism
 - e) Phototropism
 - f) Geotropism (Klinostat Expt)
4. Class record & field report. 5+5

MODEL QUESTION PAPER

VI SEMESTER

PAPER VIII –Plant Physiology – II

Time : 3 Hours

Max Marks = 60

I Answer the following by choosing the correct choice

1 x 30 = 30

1. The fixation of nitrogen in root nodules of legumes takes place in the presence of an enzyme.
a. Nitrogenase b. Nitrate reductase c. Carboxylase d. Nitrite reductase
2. Amino acids synthesis in plants occurs by
a. Oxidation c. Nitrification
b. Reductive amination d. Transformation
3. Oxido-reductases catalyse
a. Oxidation – reduction reactions c. Involve group transfer
b. Hydrolytic reactions d. Isomerization reactions
4. Coenzyme – A (Co A or Co A – SH) is a derivative of
a. Riboflavin b. Pantothenic acid c. Ascorbic acid d. Vitamin B₂
5. Warburg's effect is
a. Inhibitory effect of high oxygen concentration on Photosynthesis
b. Inhibitory effect on respiration c. Nastic movements d. Photoperiodism
6. Feed back inhibition is due to
a. Accumulation of the end product which cause inhibition in the activity of the first enzyme of the series.
b. Accumulation of enzymes. c. Accumulation of substrates. d. Accumulation of co-factors.
7. The pigments which exhibits fluorescence
a. Xanthophyll b. Ubiquinone c. Chlorophyll d. Carotene
8. In pigment system II, the reaction centre is
a. P₆₈₀ b. P₇₀₀ c. P₆₇₃ d. P₇₂
9. When cell converts light energy into chemical energy, which of the following reaction would take place.
a. $ADP + ip = ATP$ c. $ATP - ip = ADP$
b. $AMP + ip = ADP$ d. $GDP + ip = GTP$
10. Kranz anatomy is found in
a. Stems of C₄ plants. c. Stems of C₃ plants.
b. Leaves of C₄ plants. d. Leaves of C₃ plants.
11. Rubisco is
a. Reductase b. Hydrogenase c. Carboxylac d. Ligase
12. The number of carbon atoms present in ribulose -biphosphate is
a. 6 b. 5 c. 4 d. 3
13. Respiration is
a. Anabolic and exergonic c. Anabolic and endergonic
b. Catabolic and exergonic d. Catabolic and Endergonic
14. In respiration of organic acid substrate, the R.Q shall be
a. Unity b. Zero c. Less than one d. More than unity
15. Number of Carbon atoms present in citric acid, Oxaloacetic acid and pyruvic acid are respectively
a. 6, 3, & 3 b. 5, 4 & 3 c. 6, 4 & 3 d. 6, 4 & 2

16. Two molecules of ATP are formed during final oxidation of
a. NADH (H⁺) b. FADH₂ c. NADPH (H⁺) d. NAD⁺
17. The first pentose sugar formed in PPP of respiration is
a. Ribulose - 5 - phosphate b. Ribose - 5 - phosphate
c. Xylulose - 5 - phosphate d. Deoxyribose - 5 - phosphate
18. The term fermentation was coined by
a. Cruickshank b. Pasteur c. Kostytcher d. Buchner
19. Zeatin is a
a. Auxin b. Gibberellins c. Cytokinin d. ABA
20. Stomatal closure is induced by
a. Auxin b. Ethylene c. Gibberellins d. ABA
21. Gibberellins bring about
a. Yellowing of leaves b. Senescence c. Internodal Elongation d. Dwarfing of tall plants
22. Natural Auxin is
a. IAA b. 2, 4 - D c. 2, 4, 5-T d. NAA
23. Avena curvature test is a bioassay for
a. Auxin b. Cytokinin c. Gibberellins d. Ethylene
24. 2,4,-D is
a. Weedicide b. Rodenticide c. Insecticide d. Nematicide
25. Which one of the following is a stress hormone?
a. Benzyl aminopurine b. Dichloro phenyl acetic acid c. Ethylene d. Abscissic acid
26. The phenomenon of photoperiodism was discovered by
a. Garner and Allard b. Ganong c. Flemming d. Altman
27. Phytochrome is
a. A non - proteinaceous pigment b. Exists in two interconvertible forms
c. An enzyme d. Found exclusively in thallophytes
28. The termed vernalization was coined by
a. Lysenko . T. D. b. Chouarad c. Gessner d. Pasteur
29. Richmond - Lang refers to
a. Ripening of fruits b. Delaying senescence c. Premature fall of leaves d. Bolting
30. Desmodium gyrans exhibits
a. Tactic movements b. Trophic movements c. Nastic movements d. Ciliary movements

II Answer any six of the following

6 x 5 = 30

1. What are enzymes? Discuss the mechanism of action of enzymes.
2. Describe biochemical reactions of Calvin's cycle.
3. Describe the process of alcoholic fermentation.
4. Describe briefly the trophic movements in plants.
5. Give an account of photorespiration.
6. Discuss the role of phytohormones in agriculture and horticulture
7. What is photoperiodism? Explain its physiology and importance.
8. Explain the role of secondary metabolites in plant defence.

5150-BUP-300-May 2010

ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ

ಜ್ಞಾನಭಾರತಿ, ಬೆಂಗಳೂರು - 560 056.

ಸಂಖ್ಯೆ: ಎಸಿಎ-2/ಎ3/ಸೆ.ಪ/ಯು.ಜಿ /ಪರಿಷ್ಕೃತ ಪ.ಕ್ರ/2010-11,

ದಿನಾಂಕ : 18.11.2010

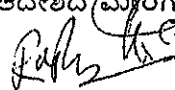
ಅಧಿಸೂಚನೆ

ವಿಷಯ: ವಿಜ್ಞಾನ ನಿಖಾಯಕ್ಕೆ ಸಂಬಂಧಪಟ್ಟ ಸ್ನಾತಕ ಪದವಿಯ ರಸಾಯನಶಾಸ್ತ್ರ ವಿಷಯದ ಸೆಮಿಸ್ಟರ್ ಪದ್ಧತಿಯ ಪರಿಷ್ಕೃತ ಪಠ್ಯಕ್ರಮವನ್ನು ಜಾರಿಗೊಳಿಸುವ ಬಗ್ಗೆ.

- ಉಲ್ಲೇಖ: 1. ದಿನಾಂಕ 02.08.2010ರ ವಿಶೇಷ ವಿಜ್ಞಾನ ನಿಖಾಯದ ಸಭೆಯ ನಿರ್ಣಯ.
2. ದಿನಾಂಕ 04.11.2010 ರಂದು ನಡೆದ ಮುಂದೂಡಿದ ವಿದ್ಯಾವಿಷಯಕ ಪರಿಷತ್ತಿನ ಸಾಮಾನ್ಯ ಸಭೆ ನಿರ್ಣಯ

* * *

ದಿನಾಂಕ 04.11.2010 ರಂದು ನಡೆದ ಮುಂದೂಡಿದ ವಿದ್ಯಾವಿಷಯಕ ಪರಿಷತ್ತಿನ ಸಾಮಾನ್ಯ ಸಭೆಯಲ್ಲಿ ಕೈಗೊಂಡ ನಿರ್ಣಯದನ್ವಯ ವಿಜ್ಞಾನ ನಿಖಾಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ, ಸ್ನಾತಕ ಪದವಿಯ ರಸಾಯನಶಾಸ್ತ್ರ ವಿಷಯದ 1 ರಿಂದ 6ನೇ ಸೆಮಿಸ್ಟರ್‌ಗಳ ಪರಿಷ್ಕೃತ ಪಠ್ಯಕ್ರಮವನ್ನು ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯವು ಅಧಿಕೃತವಾಗಿ ಈ ಮೂಲಕ ಪ್ರಕಟಿಸಿದೆ.

ಆದೇಶದ ಮೇರೆಗೆ,

ಕುಲಸಚಿವರು

ಗೆ.

ವಿಶ್ವವಿದ್ಯಾಲಯಕ್ಕೆ ಸಂಯೋಜಿತಗೊಂಡಿರುವ ವಿಜ್ಞಾನ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ರಸಾಯನಶಾಸ್ತ್ರ ವಿಷಯವನ್ನು ಬೋಧಿಸುತ್ತಿರುವ ಎಲ್ಲಾ ಕಾಲೇಜುಗಳ ಪ್ರಾಂಶುಪಾಲರುಗಳು ಮೇಲ್ಕಂಡ ಕೋರ್ಸಿನ ಪಠ್ಯಕ್ರಮವನ್ನು ವಿದ್ಯಾರ್ಹತಾಪತ್ರ-2 ರಿಂದ ಒಂದು ಪತ್ರದ ಮುಖೇನ ಪಡೆಯಬಹುದಾಗಿದೆ.

ಪ್ರತಿಗಳು:

1. ಡೀನರು, ವಿಜ್ಞಾನ ನಿಖಾಯ, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
2. ಮುಖ್ಯಸ್ಥರು, ರಸಾಯನಶಾಸ್ತ್ರ ವಿಭಾಗ, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು - ಸಂಬಂಧಪಟ್ಟ ಪರಿಷ್ಕೃತ ಪಠ್ಯಕ್ರಮವನ್ನು ವಿಶ್ವವಿದ್ಯಾಲಯದ ಗ್ರಂಥಾಲಯ ವೆಬ್‌ಸೈಟ್‌ನಲ್ಲಿ ಪ್ರಕಟಿಸಲು Soft copy and Hard copy ಯನ್ನು ಗ್ರಂಥಪಾಲಕರಿಗೆ ಒದಗಿಸಲು ಕೋರಲಾಗಿದೆ.
3. ಕುಲಸಚಿವರು (ಮೌಲ್ಯಮಾಪನ), ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
4. ಸಹಾಯಕ ಕುಲಸಚಿವರು, ವಿದ್ಯಾಶಾಖೆ-1, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
5. ಉಪಕುಲಸಚಿವರು ವಿದ್ಯಾಶಾಖೆ-2, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
6. ನಿರ್ದೇಶಕರು, ಅಂಚೆ ತೆರಪಿನ ಮತ್ತು ದೂರಶಿಕ್ಷಣ ನಿರ್ದೇಶನಾಲಯ, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
7. ನಿರ್ದೇಶಕರು, ಪ್ರಸಾರಾಂಗ, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು ಮುಂಬರುವ ಗೆಜೆಟ್‌ನಲ್ಲಿ ಪ್ರಕಟಿಸಲು ಕೋರಿದೆ.
8. ಗ್ರಂಥಪಾಲಕರು, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ ಗ್ರಂಥಾಲಯ - ಸಂಬಂಧಪಟ್ಟ ಪಠ್ಯಕ್ರಮವನ್ನು ವಿಶ್ವವಿದ್ಯಾಲಯದ ವೆಬ್‌ಸೈಟ್‌ನಲ್ಲಿ ಪ್ರಕಟಿಸಲು ಕೋರಿದೆ.
9. ಕುಲಪತಿಗಳ/ಕುಲಸಚಿವರ ಆಪ್ತಕಾರ್ಯದರ್ಶಿಗಳಿಗೆ, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
10. ಸಮನ್ವಯಾಧಿಕಾರಿಗಳು, ಸಂಖ್ಯಾಶಾಸ್ತ್ರ ವಿಭಾಗ, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
11. ಕಛೇರಿ ಪ್ರತಿ.

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Mr. Jagath
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Note: Copy Given to Dept. of
Chemistry, PTO for Atk.

01/12/10

BANGALORE



UNIVERSITY

B.Sc. Chemistry Syllabus

for

I to VI Semesters

(w.e.f. 2010) 2011

Department of Chemistry

Central College Campus, Bangalore - 560 001

Proceedings of the meeting of the Board of Studies in Chemistry (UG) held on 14th June 2010 in the Department of Chemistry, Central College Campus, Bangalore University, Bangalore-560001.

A meeting of the Board of Studies in Chemistry (UG) was held on Monday, the 14th of June 2010 at 10.30 am in the department for constitution of BOE and preparation of Panel of Examiners in respect of UG (B.Sc Chemistry & Biochemistry, Annual and Semester schemes) and professional course (B.E.Engineering chemistry) examinations of 2010-2011 and also to discuss about introduction of MCQ pattern of question papers for 3 year B.Sc degree course and for the approval of the draft syllabus prepared for 3 year B.Sc course to be introduced from 2010 onwards.

The Chairman welcomed the members and as per the agenda item one, placed before them the list of examiners submitted by the various colleges in response to the University Notification Vide notification No. EX-I/BOS panel/UG/PG Exams/Annual & semester/2010-2011 dated:06-02-2010. The chairman also provided the members with the lists of BOE constituted for the three previous academic years viz, 2007-08, 2008-09 & 2009-10 in respect of the above three courses and requested the members to constitute the BOE and panel of examiners in the light of the above for the 2010-2011 for B.Sc. Chemistry (Annual & Semester scheme) and B.E (Engineering Chemistry) examination of 2010-2011.

Since the BOS in Biochemistry has not yet been constituted the BOS in chemistry constituted the BOE and prepared the panel of examiners for B.Sc Biochemistry examinations of 2010-2011 as per the request of the Chairman, Department of Biochemistry.

The members after careful scrutiny constituted the BOE and prepared the panel of examiners for the B.Sc Chemistry, B.Sc Biochemistry and B.E (Engg. Chemistry) Examinations 2010-2011.

The BOS also ratified the consolidated list of examiners submitted by Dr. Bulbule, Chairman, BOE in Chemistry (2009-10 exam) as per the request of the Chairman, BOE for May/June exam of 2010.

The Chairman briefed the members about the second agenda, i.e the introduction of MCQ pattern for B.Sc degree examination and preparation of question paper in the new format for that. The matter was discussed at length in the meeting. The pros and cons of all the related aspects were also discussed. The board in principle agreed for the introduction of MCQ pattern, but unanimously resolved to request the University authorities to conduct a workshop with a larger group of teachers of all subjects involving UG (BOS) members and UG (BOE) members also to discuss the implications of introduction of MCQ pattern and to come out with a concrete solution at the earliest. BOS recommends to implement the introduction of MCQ pattern after a thorough discussion.

Then the third agenda was taken up for discussion. The Chairman informed the members that as per the direction from Bangalore University, the Chemistry syllabus for the B.Sc degree had to be revised which are proposed to be introduced from 2010 onwards. In this connection, the DOS in Chemistry, Bangalore University, Bangalore with the help of Chemistry Teacher's Forum constituted a core committee from University department and affiliated Colleges. The core group participated in workshops held on three days 11th March 2010, 30th March 2010 and 7th

April 2010 and prepared a draft copy of the revised syllabus. The syllabus was then finalized in a workshop conducted on 12th May 2010 in the presence of a wider group of Teachers represented by most of the colleges offering Chemistry at UG level. It is this syllabus that is placed before the board for scrutiny and approval.

The Board unanimously approved the syllabus after some modification.

The BOS also recommends to the University to constitute a BOS (UG) in Biochemistry as Biochemistry department is bifurcated from Chemistry department.

The Chairman finally thanked all the members for their presence and their valuable inputs for the deliberations of the day.

1. Dr. Anantha, C (Member) *Anantha C.*
2. Prof. Nusarath Zareen " *NZ*
3. Prof. Shivaiah " *Retired*
4. Prof. Chikkanna " *Chikkanna*
5. Dr. Halesh, R " *Halesh R*
6. Prof. Girija, M. S " *Girija M.S*
7. Dr. C. Krishna Kumar " *ckkr*
8. Prof. Ramesh Babu A. " *Ramesh Babu A.*
09. Prof. Siddaramappa B.R. " *Siddaramappa B.R.*
10. Prof. K. N. Mahendra (Chairman) *Mahendra KN 14/6/10*

**Members of the Committee for the Revision of Chemistry Syllabus for
B.Sc. degree course (Semester Scheme)**

Department of Chemistry: Central College Campus, Bangalore University, Bangalore.

Prof. K. N. Mahendra
Chairman, DOS in Chemistry
Bangalore University, Central College Campus, Bangalore - 560 001

Inorganic Chemistry Section

Prof. K. R. Nagasundar, Central College, Bangalore

Dr. V. G. Gayathri, Central College, Bangalore

Organic Chemistry Section

Prof. M A. Pasha, Central College, Bangalore

Dr. Hariprasad, Central College, Bangalore

Physical Chemistry Section

Prof. M. Farooq Ahmed, Central College, Bangalore

Prof. L. Gomathi Devi, Central College, Bangalore

Biochemistry Section

Dr. V. R. Devaraj, Central College, Bangalore

Organiser

Dr. R. Ramachandrappa
President, Chemistry Teachers' Forum, Jyotinivas College, Bangalore

Coordinator

Dr. A. Sreenivasan, National College, Basavanagudi, Bangalore

for

Chemistry Teachers' Forum : Bangalore University, Bangalore

Physical Chemistry Section

- Dr. Nandeesh, SJRC College, Bangalore
Mr. Ananth, MES College, Bangalore
Dr. Chenne Gowda, VV Puram Science College, Bangalore
Mr. C. Nagaraju National College, Gowribidanuru
Dr. N. C. Subramanyam, APS College, Bangalore
Dr. Shahintaj, Al Ameen, College, Bangalore
Dr. Girija, SSMRV College, Bangalore
Ms. Mythili, Maharani Science College, Bangalore

Inorganic Chemistry Section

- Mr. Aswantharayanappa, National College, Jayanagar, Bangalore
Dr. Donappa, MLA College, Bangalore
Mr. Ramanna, Kongadiappa College, Doddaballapura
Mr. Bulbule, KLE College, Bangalore
Dr. Nagaraju, St. Joseph College, Bangalore
Mr. Jugalle, Govt. First Grade College, K R Puram, Bangalore
Dr. Muddu Krishna, Maharani College for Women, Bangalore
Mr. Shivappa Notagar, Vijaya College, Basavanagudi, Bangalore

Organic Chemistry Section

- Mr. Arunachalam, National College, Basavanagudi, Bangalore
Dr. M. Ramaiah, NMKRV College, Bangalore
Mr. Ramesh Babu, Vijaya College, Basavanagudi, Bangalore
Mr. Devaraju, Kuvempu College, Chennapattana
Mr. Nataraja, Maharani Science College, Bangalore
Mr. Chandargi, Govt. Science College, Bangalore
Mr. L. K. Srivatsa, Vijaya College, Jayanagar, Bangalore

Biochemistry Section

- Mr. Ashraf Ali, Al Ameen College, Bangalore
Ms. Manjula, Vijaya College, Basavanagudi, Bangalore
Dr. Nanda, BMS College for Women, Bangalore
Mr. Prabanjan Kumar, APS College, Bangalore
Ms. Malini Nagaraju, Jyothi Nivas College, Bangalore
Mr. Venkata Reddy, VV Puram Science College, Bangalore

Proceedings of the Meeting of Board of Studies in Chemistry (UG)
held on Monday, the 14th June 2010 at 10.30 am
in the Department of Chemistry, Central College Campus, Bangalore-560 001.

The Chairman welcomed the members of the Board to the meeting and introduced them. He placed the agenda for the day's discussion.

Agenda: Scrutiny and approval of the Draft Syllabus for B.Sc, Chemistry Semester Scheme.

The Chairman informed the members that as per the directive from Bangalore University, the Chemistry syllabus for the B. Sc. degree had to be revised which is proposed to be introduced from 2010 onwards. In this connection, the Department of Studies in Chemistry, Central College with the help of Chemistry Teachers' Forum constituted a Core Group from University Department and affiliated Colleges. The Core Group participated in a work shop held for three days on 22.03.2010, 30.03.2010 and 07.04.2010 and prepared a Draft of the revised syllabus. The syllabus was then finalized in a workshop conducted on 12th May 2010 in the presence of a wider group of Teachers represented by most of the colleges offering Chemistry at UG level. It is this draft that is placed before the Board for Scrutiny and approval.

The Board approved the Syllabus after some modification.

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FOREWORD

As per the directive from Bangalore University, the Chemistry syllabus for the B.Sc., degree course had to be revised. Guidelines for this were provided by the Task Force Committee constituted by the University.

The Department of Studies in Chemistry, Central College, with the help of the Chemistry Teachers' Forum, constituted a Core Group involving the Teachers of the University Department and affiliated colleges. This Core Group, consisting of about forty teachers participated in a work shop held three days on 22.03.2010, 30.03.2010 and 07.04.2010 and prepared a draft syllabus keeping in view the aims of the UGC Model Curriculum in developing interdisciplinary skills in students linking general studies with professional courses and allowing both vertical and horizontal mobility and also catering to local needs.

Teachers of different branches of Chemistry, namely Inorganic, Organic, Physical and Biochemistry had separate and joint brainstorming sessions and arrived at a Draft Syllabi in Chemistry for six semesters. A paper in Biochemistry has been included in the Chemistry syllabus because it was felt that students would benefit by exposure to this interdisciplinary area.

The Chemistry Teachers' Forum played a pivotal role during the drafting of the syllabus. The Draft Syllabi in chemistry was brought to the attention of a wider group of Teachers for further refinement on 12th May 2010. The final draft incorporating the suggestions was placed before the Board of Studies in Chemistry and was approved after some modification.

CHAIRMAN
Department of Studies in Chemistry
Bangalore University
Bangalore-560 001

Structure of B.Sc. Degree Course (Triple Main/Major)

CHEMISTRY

Semester	Title of the Paper	Teaching hours/week	Duration of Examination	Marks Allotment		Total Marks
				Internal Assessment	Theory	
I	Chemistry-1 (General)	4	3	10	60	70
	Practical-1 (General)	3	3	-	30	30
II	Chemistry-2 (General)	4	3	10	60	70
	Practical-2 (Physical)	3	3	-	30	30
III	Chemistry-3 (General)	4	3	10	60	70
	Practical-3 (Organic)	3	3	-	30	30
IV	Chemistry-4 (General)	4	3	10	60	70
	Practical-4 (Inorganic)	3	3	-	30	30
V	Chemistry-5 (Organic)	3	3	10	60	70
	Chemistry-6 (Physical)	3	3	10	60	70
	Practical-5 (Organic)	3	3	-	30	30
	Practical-6 (Physical)	3	3	-	30	30
VI	Chemistry-7 (Inorganic)	3	3	10	60	70
	Chemistry-8 (Biochemistry)	3	3	10	60	70
	Practical-7 (Inorganic)	3	3	-	30	30
	Practical-8 (Biochemistry)	3	3	-	30	30

B.Sc. - I Semester

(Paper - I)

Contents

Chapter No.	Title	Number of Teaching hours
1	Mathematical Concepts for Chemistry	4
2	Quantum Mechanics and Atomic Structure	10
3	Periodic Table and Periodic Properties	10
4	Oxidation Numbers	3
5	Non-aqueous solvents	2
6	Liquids and Solutions	9
7	Classification and Nomenclature of organic compounds	3
8	Basic concepts in organic chemistry	4
9	Aliphatic hydrocarbons	10
	Total	55

Chapter 1: Mathematical Concepts for Chemistry

4 hours

Logarithmic relations: Definition, some important relations like $\log(m+n)$, $\log\left(\frac{m}{n}\right)$, $\log m^n$, change of base ($\log_e 2 \rightarrow \log_e x$). Application in the calculation of pH.

Curve sketching: How a curve is sketched with a set of points: linear and non-linear (asymptotic) with a set of points, sketching both linear and non-linear curves. Calculation of slope in the case of linear curve. Extrapolation of linear curve and arriving at a limiting value.

Parabolic curve- maximum and minimum.

Differentiation: Meaning and derivative of functions like e^x , $\log x$, $\sin x$, $\cos x$, $\frac{1}{x}$, x^2 , x^x and \sqrt{n} , $\frac{dy}{dx} = 0$ at maximum and minimum.

2nd order differentiation: for maximum and minimum (derivation from first principles not required). Rules of differentiation for $y = u + v$, $y = uv$, $y = \frac{u}{v}$ and $y = ku$, where k is constant.

Partial differentiation: Explanation, applications using the equation, $H = U + PV$ and $G = H - TS$.

Integration: Meaning and integrals of functions like x , dx , x^2 , $\frac{1}{x}$, $\frac{1}{x^2}$, $\frac{1}{x^3}$, x^n , e^x , $\sin x$ and $\cos x$. simple problems from I and II order kinetics.

Exact and inexact differentials: Examples from internal energy and enthalpy.

Definite integrals.

*Permutations and combinations-*A brief introduction.

Probability: some definitions, examples from atomic orbitals, wave functions and entropy.

Chapter 2: Quantum Mechanics and Atomic Structure

10 hours

Bohr's atomic model: (i) Assumptions, (ii) Derivation of expressions of for radius, energy and wave number for the hydrogen atom. (iii) Calculation of wave numbers of spectral lines of different series in the hydrogen spectrum. (iv) Calculation of ionisation energies of hydrogen like atoms. (v) Interpretation of the origin of discrete spectrum. Defects of Bohr's atomic model. de-Broglie's hypothesis. Heisenberg's uncertainty principle.

New Quantum Mechanics: Sinusoidal wave equation (classical wave mechanics); Schrodinger wave equation-interpretation of the terms: (i) hamiltonian operator (ii) eigen function Ψ (significance of ψ and ψ^2) (iii) eigen values.

Application of Schrodinger equation: (i) to particle in one dimensional box (ii) to the hydrogen atom (detailed solution not required). Expressing the solution as a product of $\psi_{n,l,m}(r, \theta, \phi) = \psi_n$,

$l, m, \psi_{l,m}(\theta, \phi)$

Explanation of quantum numbers (only qualitative). Radial probability distribution and angular probability distribution. Orbitals-shapes of s , p and d orbitals. Pauli's exclusion principle, Hund's multiplicity rule, aufbau principle, electronic configuration of elements (upto atomic number 60).

Chapter 3: Periodic Table and Periodic Properties

10 hours

Modern Periodic law, classification of elements in the long form periodic table into *s*, *p*, *d* and *f*-blocks, outer shell electronic configuration of these blocks.

Atomic and ionic radii, ionization energy, electron affinity and electronegativity - definition, methods of determination of electronegativity (Pauling's and Mulliken's method), trends in the periodic properties and applications in predicting and explaining chemical behavior. Comparative study of elements of groups 1, 2, 16 and 17, with respect to electronic configuration, atomic and ionic radii, ionization energy and electronegativity. Compounds of groups 1 and 2 (halides, oxides and carbonates). Diagonal relationship between Be and Al. Hydrides of groups 16 and 17.

Chapter 4: Oxidation Numbers

3 hours

Definition, difference between valency and oxidation number, computation of oxidation numbers, balancing of red-ox reactions by ion-electron method, calculations of equivalent weight of oxidizing and reducing agents.

Chapter 5: Non-aqueous solvents

2 hours

Liquid ammonia and liquid sulphur dioxide - solvent properties and typical reactions.

Chapter 6: Liquids and Solutions

9 hours

Properties of liquids: Surface tension and its determination using stalagmometer. Viscosity of a liquid and determination of coefficient of viscosity using Ostwald's viscometer. Effect of temperature on surface tension and coefficient of viscosity of a liquid (qualitative treatment only).

Solutions of liquids in liquids: Thermodynamics of ideal solutions and Raoult's law.

Non-ideal solutions: Vapour pressure-composition and temperature composition curves of ideal and non-ideal solutions. Distillation of solutions-Lever rule, azeotropes. Partial miscibility of liquids. Critical solution temperature. Immiscibility of liquids. Principle of steam distillation, Nernst distribution law and its application. Solvent extraction.

Solutions of gases in liquids: Henry's law of gas solubility and its applications

Solutions of solids in liquids: Colligative properties - Review of colligative properties, Raoult's law of relative lowering of vapour pressure and its limitations. Determination of molecular mass of a solute by (i) Berkeley-Hartley's method (π), (ii) Beckmann's method (ΔT_f) and (iii) Landsberger's method (ΔT_b). Abnormal molecular masses, vant-Hoff's factor *i* and its significance.

Chapter 7: Classification and Nomenclature of organic compounds 3 hours

Introduction; classification and IUPAC nomenclature of polyfunctional organic compounds.

Chapter 8: Basic concepts in organic chemistry

4 hours

Types of bond cleavage-arrow notations.

Electrophilic and nucleophilic reagents; Electrophiles and nucleophiles.

Electron displacement in organic molecules: Inductive, resonance and hyperconjugative effects.

Reactive intermediates: Generation, structure and stability of carbocations, carbanions, carbon free radicals and carbenes. Assigning formal charges.

Chapter 9: Aliphatic hydrocarbons

10 hours

Alkanes: Isomerism. Methods of preparation-Wurtz reaction and Corey-House Reaction. Mechanism of free radical substitution. Reactivity and selectivity of chlorination and bromination.

Conformations of hydrocarbons: Conformation analysis of ethane, propane and *n*-butane. Sawhorse and Newman projection formulae to be used.

Alkenes: Isomerism. Methods of preparation-dehydration of alcohols, dehydrohalogenation of alkyl halides, Wittig reaction-Stereoselectivity.

Reactions of alkenes: Addition of HX. Markownikov's rule; Mechanism of Markownikov's and anti-Markownikov's addition (peroxide effect). Catalytic hydrogenation, Hydroboration-trapping out with aqueous acetic acid, oxymercuration-demercuration. Epoxidation. Mechanism of: (i) Oxidation with KMnO_4 and OsO_4 ; and (ii) Ozonolysis.

Conjugated dienes (Examples with $n = 2$ & 3): 1, 3-Butadiene: 1, 2 and 1, 4-addition reactions; Diels-Alder reaction : (i) 1,3-butadiene with maleic anhydride, (ii) cyclohexadiene with 1, 2-dichloroethyne.

Alkynes: Methods of preparation-dehydrohalogenation of vicinal and geminal dihalides and higher alkynes from terminal alkynes.

Reactions of alkynes-Electrophilic addition reactions, catalytic hydrogenation, metal-ammonia reduction, oxidation with KMnO_4 , hydroboration-oxidation and polymerization. Acidic nature of terminal alkynes.



B.Sc. - II Semester**(Paper – II)****Contents**

Chapter No.	Title	Number of Teaching hours
1	Chemical Bonding	13
2	Noble gases	3
3	Compounds of some non-metals	7
4	Silicates	2
5	Thermodynamcis	14
6	Alicyclic hydrocarbons	2
7	Aromatic hydrocarbons	8
8	Organic halogen compounds	6
	Total	55

Chapter 1: Chemical Bonding

13 hours

Ionic bond: Lattice energy, Born - Haber cycle, Born - Lande equation (Derivation not required, problems on Born - Lande expression to be worked out), Calculation of lattice energies of NaCl and MgO, effect of lattice energy on solubility of ionic compounds.

Covalent bond: Valence bond approach; Hybridization and directional characteristics sp , sp^2 , sp^3 , sp^3d , sp^3d^2 , shapes of $BeCl_2$, BF_3 , $SiCl_4$, PCl_5 , SF_6 . VSEPR Theory - Shapes of CH_4 , NH_3 , NH_4^+ , H_2O , BrF_3 , ICl_2^- . *Molecular Orbital Theory:* H_2 , He_2^+ , Be_2 , N_2 , O_2 , O_2^- , O_2^{2-} , O_2^+ , CO (Bond order, stability and Magnetic properties to be discussed). Polarization concept, Fajan's rules, bond length, bond angle and bond energy, polar and non-polar molecules, dipole moment.

Weak Interactions: (i) *Hydrogen bond* - Intra-molecular and inter-molecular types, anomalous properties of HF, H_2O , NH_3 , alcohols, carboxylic acids, nitrophenols and bio-molecules

(ii) *van der Waal's forces* - noble gases and molecular crystals.

Metallic bond - Band theory, electrical properties of metals, semiconductors and insulators.

Chapter 2: Noble gases

3 hours

Introduction. Isolation of helium from natural gas, applications. Preparation, properties and structures of fluorides and oxides of xenon.

Chapter 3: Compounds of some non-metals

7 hours

Synthesis, structure and applications of compounds of the following elements:

- (i) Boron: boranes (classification), Wades Rule, diborane, boron trifluoride and borazole.
- (ii) Nitrogen: hydrazine, hydroxylamine and hydrazoic acid
- (iii) Sulphur: thionyl chloride, sulphuryl chloride and sulphur hexafluoride
- (iv) Halogens: Bleaching powder and interhalogen compounds - ClF_3 , BrF_5 , IF_7 .

Chapter 4: Silicates

2 hours

Structure of SiO_4^{4-} , classification of silicates. Zeolites-their structure and applications.

Chapter 5: Thermodynamics

14 hours

Definition of terms in thermodynamics: Types of variables, intensive and extensive properties. Types of systems - open, closed and isolated systems. Types of processes-isothermal, adiabatic, reversible and irreversible processes. Thermodynamic equilibrium. State functions, exact and inexact differentials. Concept of internal energy (the symbol U to be used), heat and work.

First law of thermodynamics: significance of internal energy and enthalpy. Work done in isothermal and adiabatic expansion and compression of an ideal gas (IUPAC sign conventions to be used).

Heat capacity of a gas at constant pressure and constant volume: relation between P, V and T in an adiabatic process to be derived. Derivation of Kirchoff's equation. Numerical problems.

Second law of thermodynamics: Limitations of I law of thermodynamics with illustrations. Need for II law of thermodynamics, different ways of stating II law with respect to heat and spontaneity. Spontaneous and non-spontaneous processes. Other forms of II law of thermodynamics. Concept of entropy and its significance-illustrations with order, disorder, physical and chemical processes and probability.

Heat engine-Carnot's cycle and derivation of the expression for its efficiency. Problems based on efficiency equation. II law in terms of efficiency (η). Change in entropy in reversible and irreversible processes. Calculation of entropy changes in reversible isothermal and reversible adiabatic processes. Phase transitions (melting point, vaporization, sublimation and polymorphic changes) in terms of entropy. Limitations of the entropy concept of spontaneity.

Gibb's free energy: Work function, chemical potential. Definition and relationship between free energy and work function. Criteria for equilibrium and spontaneous processes. Gibb's-Helmholtz equation-Derivation. Change of free energy with respect to temperature and pressure. Mention of temperature coefficient, van't Hoff isotherm, $\Delta G^\circ = -RT \ln K_p$. Problems.

Derivation of van't Hoff reaction isochore and Clausius-Clapeyron equation. Its applications to ΔT_b and ΔT_f determination (thermodynamic derivation not required).

Qualitative treatment of Nernst heat theorem and III law of thermodynamics-statement only. Elementary concept of residual entropy.

Chapter 6: Alicyclic hydrocarbons

2 hours

Cycloalkanes: Classification, nomenclature, methods of preparation, chemical reactions.

Chapter 7: Aromatic hydrocarbons

8 hours

Nomenclature of benzene derivatives; Kekule structures, resonance structures and molecular orbital theory of benzene, Huckel's rule of aromaticity (Example: cyclopentadienyl anion, cycloheptatrienyl cation, benzene, naphthalene, anthracene and phenanthrene). Antiaromaticity.

General mechanism of aromatic electrophilic substitution. Orienting influence of substituents in toluene, chlorobenzene, nitrobenzene and phenol; hyperconjugation and resonance effects of these groups; catalytic hydrogenation of aromatic compounds, Birch reduction. Side chain oxidation of toluene to benzaldehyde and benzoic acid. Oxidation of naphthalene, anthracene and phenanthrene. Diels-Alder reaction of anthracene with (i) maleic anhydride, (ii) 1,2-dichloroethene.

Alkenyl benzenes: Styrene, *cis* and *trans*-stilbenes and their preparations.

Biphenyl: Preparation-Ullmann reaction.

Chapter 8: Organic halogen compounds

6 hours

Alkyl halides: Introduction and classification: Nucleophilic substitution reactions- S_N1 and S_N2 mechanisms with energy profile diagrams. Effect of (i) nature of alkyl groups, (ii) nature of leaving groups, (iii) nucleophiles and (iv) solvents on S_N1 and S_N2 mechanisms.

Elimination reactions-E1 and E2 mechanisms; Saytzeff and Hofmann eliminations with mechanisms.

Aryl halides: Preparation by halogenation. Relative reactivity of alkyl, allyl, vinyl, aryl and aralkyl halides towards nucleophilic substitution. Generation of benzyne-trapping with dienes (Example: furan and anthracene).



B.Sc. - III Semester
(Paper - III)
Contents

Chapter No.	Title	Number of Teaching hours
1	Chemical Kinetics	8
2	Solid state	9
3	Gaseous State	7
4	Organic and Inorganic Polymers	4
5	General study of <i>d</i> - and <i>f</i> - block elements	7
6	Metallurgy	5
7	Alcohols and Thiols	7
8	Phenols	3
9	Ethers and Thioethers	3
10	Organometallic compounds	2
	Total	55

Chapter 1: Chemical Kinetics

8 hours

Reaction rates: factors influencing the rate of a reaction – concentration, temperature, pressure, solvent, light and catalyst. Order and molecularity of reactions. Mathematical expressions for zero and first order reactions to be assumed. Derivation of expression for the rate constant of a second order reaction with $a = b$ and $a \neq b$. Expression for half life of a second order reaction. Mean life for first order reaction to be mentioned. Problems on rate constant, half life period, mean life period and order of reaction.

Determination of order of reaction: differential method, method of integration, method of half life period and isolation method.

Theories of reaction rates: Effect of temperature on rate of reaction, Arrhenius equation, concept of activation energy. Problems.

Simple collisions theory based on hard sphere model, transition state theory (equilibrium hypothesis). Expression for the rate constant based on equilibrium constant and thermodynamic aspects. Steady state approximation and Lindemann's hypothesis.

Experimental determination of kinetics of (i) inversion of cane sugar by polarimetric method, (ii) spectrophotometric method for the reaction between potassium persulphate and potassium iodide.

Chapter 2: Solid state

9 hours

Brief introduction to the structural differences between solids, liquids and gases. Definition of space lattice, unit cell. Laws of crystallography. Symmetry elements in crystals, crystal systems. Weiss and Miller indices. X-ray diffraction of crystals-derivation of Bragg's equation, problems.

Determination of the structure of NaCl by rotating crystal method.

Structure of ionic solids based on radius ratio (calculations not required). Coordination number in ionic solids. Structures of NaCl, CsCl, ZnS, CaF₂ and CaTiO₃ crystals. Schottky and Frenkel defects. Variation of properties due to defects should be mentioned. F-centers. Gemstones. Non-stoichiometric compounds (FeO, transition metal hydrides). Classification and applications of liquid crystals.

Chapter 3: Gaseous state

7 hours

Introduction: Need for Maxwell-Boltzmann distribution law, mathematical expression for both mole and molecule-explanation of the terms only. Explanation of velocity distribution curves based on this law (no derivation). Mean free path, collision frequency and collision number. Definition and expressions using SI units (no derivations). Derivation of expression for most probable speed from Maxwell-Boltzmann equation. Definitions and expressions for rms velocity and average velocity, relationships between them. Problems.

Andrew's isotherm on carbon dioxide and explanation of the curves (no experimental details). Derivation of critical constants T_c , P_c and V_c from van der Waal's equation and their experimental determination by Cagniard de La Tour method for T_c and P_c . Amagat's mean density method for V_c . Problems on the calculation of T_c , P_c and V_c , a and b .

Law of corresponding states-statements, reduced equation of state and explanation; Joule-Thomson effect-explanation. Joule-Thomson co-efficient, inversion temperature-definition (no derivation). The application of Joule-Thomson effect to the liquefaction of air and hydrogen by Linde's process.

Chapter 4: Organic and Inorganic Polymers

4 hours

Polymerization: Types-addition and condensation polymerization.

Molecular weight of polymers: Expression for weight average and number average. (Experimental determination is not required).

Preparation and applications of the following types of polymers:

1. **Plastics:** (i) Thermosetting plastics (phenol-formaldehyde)
(ii) Thermosoftening plastics (PVC)
2. **Fibers:** Acrylic, polyamide, polyester types-one example for each.
3. **Rubber:** Neoprene.
4. **Fluorocarbons:** Teflon.
5. **Silicones:**

Differences between inorganic and organic polymers.

Chapter 5: General study of d- and f- block elements

7 hours

Transition elements: Electronic configuration, atomic and ionic radii, ionization energy, oxidation states, redox potentials, spectral and magnetic properties, catalytic activity, interstitial compound formation.

Lanthanides and actinides: Electronic configuration, atomic and ionic sizes, lanthanide contraction and its consequences. Oxidation states, spectral and magnetic properties, comparison of oxidation states, complex formation and magnetic properties of d- and f- block elements. Ion-exchange method of separation of Lanthanides.

Chapter 6: Metallurgy

5 hours

Ellingham's diagrams: Salient features. Selection of reducing agent using Ellingham's diagrams.

Extraction of the following metals:

- (i) Nickel from sulphide ore
- (ii) Thorium from monazite sand
- (iii) Uranium from pitchblende
- (iv) Plutonium from nuclear waste.

Chapter 7: Alcohols and Thiols

7 hours

Alcohols: Introduction and classification. Methods of preparation-(i) reduction of aldehydes, ketones, acids and esters, (ii) hydroboration-oxidation with alkaline peroxides (iii) hydration of alkenes.

Reactions of alcohols: Acidic nature, esterification, oxidation-Mechanisms of oxidation of alcohols with KMnO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$. Comparison of the reactivity of 1° , 2° and 3° alcohols.

Glycols: Preparation from alkenes using OsO_4 and KMnO_4 with mechanisms and from epoxides. Oxidation of glycols by periodic acid and lead tetraacetate with mechanisms.

Glycerol: Preparation from propene and oils/fats and uses.

Reactions of glycerol: (i) nitration, (ii) action of concentrated H_2SO_4 and (iii) oxidation by periodic acid.

Thiols: Nomenclature, methods of formation and chemical reactions.

Uses of dithianes. Introduction of umpolung character (reversal of polarity) in carbonyl compounds.

Chapter 8: Phenols

3 hours

Classification, acidic nature-Comparison of acidic strength of phenol with alcohols and carboxylic acids. Effect of substituents on acidity of phenols. Reactivity and substitution reactions. Mechanisms of Reimer-Tiemann and Kolbe-Schmidt reactions. Pechmann reaction.

Industrial applications of phenols: Conversion of phenol to (i) aspirin, (ii) methyl salicylate, (iii) salol, (iv) salicyl salicylic acid.

Chapter 9: Ethers and Epoxides

3 hours

Ethers: Methods of preparation-(i) dehydration of alcohols, (ii) Williamson's ether synthesis. Reactions-as Lewis bases (complexation with metal ions), cleavage and auto-oxidation-Ziesel's method.

Epoxides: Preparation using per acids, Darzen's reaction. Reactions of mono and 1, 2-disubstituted epoxides with (i) carbon nucleophiles; (ii) nitrogen nucleophiles, (iii) reduction with LiAlH_4 .

Chapter 10: Organometallic compounds

2 hours

Preparation and synthetic applications of Grignard reagents, Organolithium compounds and lithium dialkyl cuprates.



B.Sc. - IV Semester**(Paper – IV)****Contents**

Chapter No.	Title	Number of Teaching hours
1	Phase Equilibria	7
2	Surface Chemistry	4
3	Analytical Chemistry	6
4	Nuclear and Radiochemistry	8
5	Powder Metallurgy	3
6	Steel	6
7	Environmental Chemistry	4
8	Aldehydes and Ketones	8
9	Carboxylic acids and their derivatives	5
10	Tautomerism and Enolates	4
	Total	55

B.Sc. - IV Semester

Chapter 1: Phase Equilibria

7 hours

Statement and explanation of the terms with examples for phase (P), component (C) and degree of freedom (F), Definition and significance of phase rule. Application of phase rule to one component systems-water and sulphur, - modified form of phase rule to two component systems. Water-potassium iodide and lead-silver systems. Eutectic mixtures and their applications (examples: freezing mixtures, desilverisation of lead by Pattinson's method).

Chapter 2: Surface Chemistry

4 hours

Adsorption: Review of types of adsorption and factors affecting adsorption. Freundlich adsorption and Langmuir's adsorption isotherms. Langmuir's isotherm to be derived. BET equation (derivation not required), applications of adsorption.

Catalysis: Characteristics, types of catalysis-homogeneous and heterogeneous catalysis with examples. Mechanisms of catalysis (intermediate compound theory and adsorption theory).

Homogeneous catalysis: Acid-base catalysis, enzyme catalysis.

Heterogeneous catalysis: surface reactions, unimolecular, bi-molecular surface reactions. pH dependence of rate constant of catalysed reactions.

Autocatalysis.

Chapter 3: Analytical Chemistry

6 hours

Errors-classification, accuracy and precision. Significant figures and computation.

Organic reagents in inorganic analysis- Advantages and uses of:

- (i) EDTA in the estimation of calcium (volumetry)
- (ii) Oxine in the estimation of magnesium (gravimetry)
- (iii) DMG in the estimation of nickel (gravimetry),
- (iv) *o*-phenanthroline in the estimation of iron (colorimetry)

Electrogravimetric estimation of copper, flame photometric determination of sodium and potassium.

Chapter 4: Nuclear and Radiochemistry

8 hours

Nucleus - Structure and stability, binding energy calculations. Instability of the nuclei, radioactive decay law, half-life-Numerical problems. Radioactive equilibrium, radioactive series. Artificial radioactivity - nuclear reactions induced by γ -radiation α , n , p , and d particles. Nuclear fission and fusion. Nuclear reactors, Breeder reactors, atomic energy programme in India. Isotopes - use of radioisotopes in tracer technique, agriculture, medicine, food preservation and carbon dating-Numerical problems.

Chapter 5: Powder Metallurgy**3 hours**

Advantages of powder metallurgy and applications. Methods of production of metal powders. Production of tungsten powder from Wolframite.

Chapter 6: Steel**6 hours**

Iron - carbon phase diagram; Austenite, ferrite, cementite, and pearlite phases.

Alloy steels - influence of Si, Mn, Cr, Ni, Ti and W on the properties of steel.

Ferro alloys - production of ferrochrome, ferromanganese and ferrosilicon and their applications.

Carbon steel - classification. Heat treatment: hardening, casehardening, carburizing nitriding, tempering and annealing.

Chapter 7: Environmental Chemistry**4 hours**

Depletion of ozone in the stratosphere: Causes and remedial measures. The green house effect and its consequences. Acid rain; photochemical smog. Treatment of sewage and industrial effluents. Disposal of radioactive wastes.

Chapter 8: Aldehydes and Ketones**8 hours**

Methods of preparation: Aldehydes from acid chlorides-Rosenmund reaction, Gattermann-Koch reaction. Ketones from nitriles, carboxylic acids with alkyl lithium, acid chlorides with metal alkyls and from esters.

Mechanisms of: aldol condensation, Perkin condensation, Knoevenagel condensation, benzoin condensation and acetal formation. General mechanism of condensation with ammonia and its derivatives ($\text{NH}_2\text{-R}$; $\text{R} = \text{-NH}_2, \text{-OH}, \text{-NH-CO-NH}_2$).

Reduction: Mechanisms of Clemmensen and Wolff-Kishner reductions, reduction by LiAlH_4 and NaBH_4 . Mannich reaction.

Chapter 9: Carboxylic acids and their derivatives.**5 hours**

Classification upto ω -carboxylic acids.

Preparation: Hydrolysis of nitriles with mechanism.

Acidic strength-effect of substituents on the strength of aliphatic and aromatic carboxylic acids.

Reactions: formation of esters, acid chlorides, amides and anhydrides, Hell-Vollhardt-Zelinski reaction, decarboxylation and reduction.

Di and tri carboxylic acids: Action of heat on dicarboxylic acids, reactions of tartaric acid and citric acid.

Reactions of acid chlorides, acid anhydrides, esters and amides. Mechanism of ester hydrolysis-acid and base catalysed (acyl O-cleavage: $\text{B}_{\text{AC}2}$, $\text{A}_{\text{AC}2}$; alkyl O-cleavage $\text{A}_{\text{AL}1}$ mechanisms).

Chapter 10: Tautomerism and Enolates**4 hours**

Tautomerism in carbonyl compounds: acidity of α -hydrogen atoms, halogenation of enolisable aldehydes and ketones.

Active methylene compounds: Preparation and synthetic applications of diethyl malonate, ethyl acetoacetate and acetyl acetone.



B.Sc. - V Semester
(Organic Chemistry: Paper V)

Contents

Chapter No.	Title	Number of Teaching hours
1	Stereochemistry	8
2	Amines	5
3	Heterocyclic compounds	4
4	Chemistry of Natural Products	10
5	Spectroscopy of Organic compounds	8
6	Industrial Organic Chemistry	5
	Total	40

B.Sc. - V Semester (Organic Chemistry)

Chapter 1: Stereochemistry

8 hours

Elements of symmetry, chirality, stereogenic centre. Fischer projection formulae.

Enantiomers: Optical activity; use of +/-, *d/l* and *D/L* notations. Properties of enantiomers, chiral and achiral molecules with two stereogenic centers. Meso compounds. Cahn-Ingold-Prelog sequence rules: R, S system of nomenclature.

Diastereomers: threo and erythro diastereomers.

Racemisation and resolution. Relative and absolute configuration.

Optical isomerism due to restricted rotation about single bonds-diphenyl systems.

Geometric isomerism: Determination of configuration of geometric isomers. Cis & trans, E, Z system of nomenclature. Geometric isomerism in oximes.

Alicyclic compounds: Conformations of four to eight membered cycloalkanes and disubstituted cyclohexanes.

Bicyclic systems: Nomenclature and conformations of decalins and norbornane.

Chapter 2 : Amines

5 hours

Classification. Preparation of alkyl and aryl amines-reductive amination of carbonyl compounds, Gabriel phthalimide synthesis and Hofman bromamide reaction.

Basicity of amines: Inductive, resonance, steric and solvation effects on the basicity of amines. Reaction of amines as nucleophiles. Distinguishing reactions of 1°, 2° and 3° amines. Diazotization and synthetic applications of diazonium salts. Sandmeyer's reaction. (conversion to chlorobenzene, bromobenzene and benzonitrile), hydrolysis, reduction (to phenyl hydrazine and aniline), coupling reactions to give azo dyes (*p*-hydroxyazobenzene and 1-phenylazo-2-naphthol).

Chapter 3 : Heterocyclic compounds

4 hours

Introduction, classification, structures, resonance and aromatic character of furan, pyrrole, thiophene and pyridine. Methods of preparation and reactions of pyrrole, furan, thiophene, pyridine. Mechanism of electrophilic substitution reactions. Comparison of basicity of pyrrole, pyridine and piperidine. Preparation and reactions of indole, quinoline and isoquinoline.

Chapter 4 : Chemistry of Natural Products

10 hours

Carbohydrates: Introduction and classification.

Monosaccharides: Aldoses, structures of all the D-aldohexoses. Elucidation of open chain structure of D-glucose. Mechanism of mutarotation and anomeric effect. Elucidation of ring structure of D-glucose in detail.

Ketoses: Fructose, interconversion of glucose and fructose.

Disaccharides: Glycosidic bond. Structures of maltose, lactose and sucrose-Haworth and conformational structures.

Terpenes and terpenoids: Occurrence, classification and isoprene rule. Elucidation of structure and synthesis of citral and zingiberene. Structures of limonene, menthol, α -terpineol, camphor, β -carotene, Vitamins-A and their uses.

Alkaloids: Introduction, classification and general characteristics. Structural elucidation and synthesis of nicotine. Structures and uses of ephedrine, caffeine, cocaine, atropine, quinine and morphine.

Chapter 5 : Spectroscopy of Organic compounds

8 hours

UV-Visible spectroscopy: Introduction. Chromophores and auxochromes; blue shift and red shift. Graphical representation of spectra of 1, 3-butadiene, benzene and lycopene. Influence of conjugation on UV absorption-Comparison of UV spectra of acetone and methyl vinyl ketone.

IR spectroscopy: Introduction. Stretching frequencies of $-\text{OH}$ (free and H-bonded), alkyl $-\text{C}-\text{H}$, $\text{C}\equiv\text{C}$, $\text{C}=\text{C}$, $\text{C}-\text{C}$, $\text{C}=\text{O}$ and $\text{C}-\text{O}$ groups (by taking suitable examples). Graphical representation of IR spectra of benzoic acid and methyl benzoate.

NMR spectroscopy: Basic principles of proton magnetic resonance: Nuclear magnetic spin quantum number I , influence of the magnetic field on the spin of nuclei, spin population, saturation using radio frequency. Nuclear magnetic resonance. chemical shift (δ values), uses of TMS as reference. Nuclear shielding and deshielding effects. Equivalent and non-equivalent protons. Effect of electronegativity of adjacent atoms on chemical shift values. Spin-spin splitting and spin-spin coupling (qualitative treatment only).

Applications of NMR spectroscopy including identification of simple organic molecules.

Examples: Shielding and deshielding effects for (i) methane (ii) CH_3-Cl (iii) CH_2Cl_2 (iv) CHCl_3 .

Spin-spin coupling in (i) Cl_2CHCHO (ii) 1,1,2-trichloroethane (iii) $\text{CH}_3\text{CH}_2\text{Cl}$.

Chapter 6 : Industrial Organic chemistry

5 hours

Synthetic dyes: Introduction and classification. Colour and constitution. Synthesis of congo red, malachite green, alizarin and indigo.

Drugs: Chemotherapy, classification of drugs. Synthesis and uses of paracetamol, diclofenac, ranitidine, sulphanilamide and chloramphenicol.

Introduction to Green Chemistry: Principles of Green chemistry and its application to the synthesis of ibuprofen.



B.Sc. - V Semester
(Physical Chemistry: Paper VI)

Contents

Chapter No.	Title	Number of Teaching hours
1	Electrochemistry	15
2	Ionic Equilibria	3
3	Physical properties and Molecular structure	5
4	Chemical Spectroscopy	12
5	Photochemistry	5
	Total	40

B.Sc. - V Semester (Physical Chemistry)

Chapter 1: Electrochemistry

15 hours

Definition of specific conductance, κ , equivalent conductance, Λ and molar conductance, μ in both CGS and SI units. Methods of determination of specific conductance. Evaluation of equivalent and molar conductance. Problems only in SI units. Variation of specific and equivalent/molar conductance with dilution. Strong and weak electrolytes. Conductometric titrations (only acid-base type, no mixture of acids).

Transport numbers: definition - determination by moving boundary method. Causes of abnormal transport numbers observed in certain systems. Problems on transport numbers.

Kohlrausch's law and its applications: (i) evaluation of Λ_{∞} from Λ_{+} and Λ_{-} (ii) evaluation of degree of dissociation of a weak electrolyte (iii) evaluation of Λ_{∞} of a weak electrolyte (iv) determination of solubility from conductance of saturated solutions of sparingly soluble salts (AgCl and BaSO_4). Problems based on these.

Limitations of Arrhenius theory: qualitative account of Debye-Huckel theory, Debye-Huckel-Onsager equation for aqueous solutions of 1:1 electrolytes. Verification of DHO equation.

Galvanic cell: conventions of representing galvanic cells-reversible and irreversible cells, derivation of Nernst equation for single electrode potential (free energy concept).

Weston-cadmium cell: Determination of emf of a cell by compensation method. Determination of E° of Zn/Zn^{2+} and Cu/Cu^{2+} electrodes. Liquid junction potentials, elimination of liquid junction potential.

Types of electrodes: Metal and gas electrodes (chlorine), metal/metal insoluble salt electrodes, redox electrodes. Reference electrodes-standard hydrogen electrode, calomel electrode, quinhydrone electrode and glass electrode. Determination of pH using these electrodes.

Numerical problems.

Concentration cells: (i) emf of concentration cells (ii) determination of solubility of sparingly soluble salts and numerical problems. Redox electrodes, emf of redox electrodes. Potentiometric titration involving only redox systems.

Chapter 2: Ionic equilibria

3 hours

Hydrolysis of salts of weak acids and weak bases. Ionic product of water. Relationship between K_h , K_w , K_a and K_b . Degree of hydrolysis and its relationship with K_h . Effect of temperature and dilution on degree of hydrolysis. pH of salt solutions. Problems.

Common-ion effect, buffers, buffer action and buffer capacity. pH of buffers. Henderson's equation and its derivation. Solubility product and ionic product in precipitation and in qualitative analysis.

Analytical and biological applications of buffers.

Chapter 3: Physical properties and Molecular structures

5 hours

Polarization and orientation of dipoles in an electric field: Dipole moment. Induced dipole moment (experimental determination of dipole moment not included). Clausius-Mossotti equation (only statement). Dipole moment and structure of molecules (planar and non-planar).

Magnetic properties-paramagnetic, diamagnetic and ferromagnetic systems. Electrical properties of solids and their applications.

Chapter 4: Chemical Spectroscopy

12 hours

The interaction of radiation with matter. Regions of electromagnetic spectrum and associated spectroscopic techniques.

Origin of molecular spectra: Born-Oppenheimer approximation.

Rotational spectra of diatomic molecules: Relationship between internuclear distance and moment of inertia. Expression for rotational energy. Numerical problems. Criterion for absorption of radiation-selection rule.

Vibrational spectra: Hooke's law- Expression for the frequency of SHO-force constant and its significance. Expression for vibrational energy levels of SHO. Zero point energy, numerical problems. Degree of freedom of polyatomic molecules-modes of vibration for CO₂ and H₂O molecules.

Raman spectra: Concept of polarisability. Pure rotation, vibration, qualitative study. Stokes and anti-Stokes lines-selection rules.

Advantages of Raman spectroscopy over IR spectroscopy.

Electronic spectra: Potential energy curves for bonding and antibonding molecular orbitals. Electronic transitions - qualitative description of non-bonding orbitals and transitions between them. Selection rules and Franck-Condon principle.

Chapter 5: Photochemistry

5 hours

Laws of photochemistry. Grotthus-Draper law, Stark-Einstein law, differences between photophysical and photochemical processes with examples. Comparison of photochemical and thermal reactions. Quantum yield of photochemical combination of (i) H₂ and Cl₂ (ii) H₂ and Br₂ (iii) dissociation of HI (iv) dimerisation of anthracene. Photosensitization, photostationary equilibrium. Singlet and triplet states. Fluorescence, phosphorescence, luminescence, bioluminescence and chemical sensors.

Beer-Lambert's law and its applications. Numerical problems on absorption coefficient and molar extinction coefficient.



B.Sc. - VI Semester
(Inorganic Chemistry: Paper VII)

Contents

Chapter No.	Title	Number of Teaching hours
1	Coordination and Organometallic compounds	14
2	Bioinorganic Chemistry	3
3	Industrial Materials	14
4	Chemistry of Newer Materials	9
	Total	40

B.Sc. - VI Semester (Inorganic Chemistry)

Chapter 1: Coordination and Organometallic compounds

14 hours

Coordination compounds, ligands and their classification, coordination number, nomenclature of coordination compounds, detection of complex formation. Theories of structure and bonding – Werner's Theory, EAN rule, Valence bond theory, crystal field theory (octahedral, tetrahedral and square planar complexes). Crystal field splitting and crystal field stabilization energies. Magnetic properties of $[\text{CoF}_6]^{3-}$, $[\text{Co}(\text{NH}_3)_6]^{3+}$, $[\text{Fe}(\text{CN})_6]^{4-}$, $[\text{Fe}(\text{CN})_6]^{3-}$. Spectral properties of $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$, $[\text{Co}(\text{H}_2\text{O})_6]^{3+}$, $[\text{CoCl}_4]^{2-}$. Isomerism-structural and stereoisomerism.

Organometallic compounds – ligands, classification (hapticity); synthesis and structure of a) $\text{K}[\text{PtCl}_3(\eta^2\text{-C}_2\text{H}_4)]$, $[\text{Fe}(\eta^5\text{-C}_5\text{H}_5)_2]$, b) Metal carbonyls – $\text{Cr}(\text{CO})_6$, $\text{Co}_2(\text{CO})_8$, $\text{Mn}_2(\text{CO})_{10}$; eighteen electron rule and its deviations with examples.

Applications of coordination/organometallic compounds: cis-platin in cancer therapy, Na_2Ca EDTA in the treatment of heavy metals (Pb, Hg) poisoning, Wilkinson's Catalyst in alkene hydrogenation, Monsanto acetic acid process.

Chapter 2: Bioinorganic Chemistry

3 hours

Essential and trace elements in biological systems, metallo-porphyrins with special reference to haemoglobin, myoglobin and chlorophyll. Role of cyanocobalamin in living systems.

Chapter 3: Industrial Materials

14 hours

Refractories: Properties, classification, determination of PCE values.

Abrasives – classification, applications, hardness, manufacture and importance of carborundum and tungsten carbide.

Glass: Properties, types, manufacture of soda glass. Borosilicate, metallic glass, optical glasses and polycarbonate glass. Safety glass, fire and bullet proof glasses.

Ceramics: Raw materials, varieties of clay, production of ceramic ware, glazing, insulators.

Cement: Raw materials grades, manufacture of Portland cement (including fly ash as raw material), setting process.

Paints and Varnishes: Constituents of oil and emulsion paints and their role, constituents of varnishes.

Fuels: Characteristics, Calorific value and its determination using bomb calorimeter, Coal-Varieties, Gaseous fuels-advantages, constituents and their significance, production of Coal gas and LPG. Octane number.

Explosives: Classification, preparation of dynamite and TNT

Propellants: Characteristics, classification and their applications.

Chapter 4: Chemistry of Newer materials

9 hours

Conducting polymers: Definition and examples. Conducting polyanilines, polyacetylenes. Qualitative treatment of doping, electroluminescence.

Properties: elasticity with high electrical conductivities, Engineering and biological applications.

Super conductors: Definition, type 1, type 2 and atypical. Preparation of ceramic super conductors, BCS theory (qualitative treatment only) and applications of super conductors.

Fullerenes: Definition, isolation of C_{60} . Structure and Chemical reactions (redox reactions, electrophilic aromatic substitution and bromination) of C_{60} . Commercial uses of C_{60} . Structure of carbon nanotubes.

Nanomaterials: Introduction. Different methods of production: Sol gel synthesis, inert gas condensation, mechanical alloying, plasma synthesis, electrodeposition and applications.



B.Sc. - VI Semester
(Biochemistry: Paper-VIII)
Contents

Chapter No.	Title	Number of Teaching hours
1	Introduction to Biochemistry	2
2	Carbohydrates	4
3	Lipids	4
4	Proteins	5
5	Nucleic acids	3
6	Enzymes	4
7	Biological oxidation	3
8	Metabolism	7
9	Molecular Biology	4
10	Hormones	2
11	Biochemical techniques	2
	Total	40

B.Sc. - VI Semester (Biochemistry)

Chapter 1: Introduction to Biochemistry

2 hours

Development of biochemistry as a discipline, elemental and biochemical composition of living organisms. Role of water in biochemical systems.

Chapter 2: Carbohydrates

4 hours

Structure and biological importance of derivatives of monosaccharides—amino sugars, sugar acids, sugar phosphates, N-acetylmuramic acid (NAMA) N-acetylneuraminic acid (NANA).

Structure and biological importance of oligosaccharides – isomaltose, cellobiose, trehalose.

Polysaccharides – source, comparative account of partial structure and biological function of starch, glycogen, cellulose, chitin and inulin.

Chapter 3: Lipids

4 hours

Structure, nomenclature and biological importance of fatty acids-saturated and unsaturated, triglycerides-simple, mixed and phosphoglycerides, sphingolipids- ceramide.

Definition and significance of saponification number, iodine number and rancidity

Micelles- critical micellar concentration (CMC), formation of mono and bilayers of lipids,

Liposomes-definition and applications.

Clinical significance of lipoproteins and cholesterol.

Chapter 4: Proteins

5 hours

α - Amino acids: classification on the basis of polarity of R – groups, ionic properties and reaction of amino acids. Essential and non essential amino acids. Peptide bond and its planarity.

Proteins: biological importance, classification based on structure and composition.

Levels of organization of proteins – primary structure, secondary structure (α – helix-triple helix eg. collagen and β – pleated), tertiary structure and forces stabilizing it, quaternary structure.

Denaturation and renaturation-Thermal denaturation-Aufinsen's experiment with ribonuclease.

Chapter 5: Nucleic acids

3 hours

Types: Components of nucleic acids, bases, nucleosides and nucleotides.

Polynucleotides

Structure of DNA (Watson - Crick model) and RNA. Biological roles of DNA and RNA

Protein-nucleic acid interaction-chromatin and viral nuclear capsid.

Chapter 6: Enzymes

4 hours

Characteristic features (mention of ribozymes), comparison between biological and non biological catalyst.

Classification (EC Code number not required), active site, specificity, cofactors, Fischer and Koshland models.

Enzyme Kinetics – factors affecting rate of enzymatic reactions.

Allosteric enzymes- definition, example and significance.

Competitive and non competitive inhibition.

Chapter 7: Biological oxidation**3 hours**

Bioenergetics: ATP and other high energy compounds. Energy coupling in biological reactions. Stepwise process of biological oxidation. Mitochondrial electron transport chain, oxidative phosphorylation. Substrate level phosphorylation.

Chapter 8: Metabolism**7 hours**

Catabolism and anabolism: Carbohydrate metabolism, glycolysis, fate of pyruvate. TCA cycle, energetics. Gluconeogenesis.

Fatty acid metabolism – β oxidation pathway, energetics.

Protein metabolism – general aspects of amino acids degradation – deamination, transamination and decarboxylation. Urea cycle.

Chapter 9: Molecular biology**4 hours**

Central dogma of molecular biology. Semi conservative replication and mechanism of replication, transcription, translation.

DNA Fingerprinting, sequencing-Its applications in Human genome mapping.

Chapter 10: Hormones**2 hours**

Hormones: Definition. Classification into a) amino acid derivatives b) peptide and polypeptide hormones c) Steroid hormones with examples and functions.

Role of insulin and glucagon in glucose metabolism.

Mediators of hormone action- Ca^{2+} , cyclic AMP.

Chapter 11: Biochemical techniques**2 hours**

Principle and applications of electrophoresis. Column chromatography, ion exchange, paper and TLC.



Chemistry Practicals for B.Sc. Course

I Semester: Practical 1 (General chemistry)

3 hours per week

1. Calibration of glass wares: (i) Pipette (ii) Burette (iii) Volumetric flask
2. Estimation of potassium permanganate using standard sodium oxalate solution.
3. Estimation of ferrous ammonium sulphate using standard potassium dichromate solution with potassium ferricyanide as an external indicator.
4. Estimation of ferrous ammonium sulphate using standard potassium dichromate solution with diphenyl amine as an internal indicator.
5. Estimation of sodium thiosulphate using standard potassium dichromate solution.
6. Estimation of iodine using sodium thiosulphate and standard potassium dichromate solution.
7. Determination of the percentage of available chlorine in the given sample of bleaching powder.
8. Determination of percentage of manganese dioxide from pyrolusite ore.
9. Estimation of chloride by Mohr's method (using potassium chromate as an adsorption indicator).
10. Estimation of chloride by Volhard's method.
11. Estimation of ferrous and ferric iron in a given mixture using standard potassium dichromate solution.
12. Estimation of nitrogen in an ammonium salt using sodium hydroxide solution and standard oxalic acid.
13. Estimation of carbonate and bicarbonate in a given mixture.

Note: Standard solutions to be prepared for experiments 2 to 6.

II Semester: Practical 2 (Physical chemistry)

3 hours per week

1. Determination of the density using specific gravity bottle and viscosity of a liquid using Ostwald's viscometer.
2. Determination of percentage composition of a binary liquid mixture by viscosity method.
3. Determination of molar mass of polymer by viscosity method.
4. Determination of the density using specific gravity bottle and surface tension of a liquid using Stalagmometer.
5. Determination of molar mass of a non-electrolyte by Walker-Lumsden method.
6. Determination of degree of dissociation of an electrolyte by ebullioscopic method.

7. Determination of distribution coefficient of iodine between water and carbon tetrachloride.
8. Determination of distribution coefficient of acetic acid between water and butanol.
9. Determination of distribution coefficient of benzoic acid between water and toluene.
10. Effect of surfactants on the surface tension of water (Stock solution to be given).

III Semester: Practical 3 (Organic chemistry)

3 hours per week

Preparation and purification of organic compounds

1. Recrystallisation and determination of melting point of solids (mixed melting point determination and its importance may be mentioned).
2. Simple distillation and determination of boiling point of liquids.
3. Purification of solids by sublimation.

One stage preparation

(Preparation, recrystallisation and melting point determination of the recrystallised sample)

4. Preparation of aspirin from salicylic acid.
(Note: Acetic anhydride is to be prepared freshly by distilling acetyl chloride and sodium acetate mixture).
5. Preparation of paracetamol from *p*-aminophenol.
6. Preparation of dibenzalacetone from benzaldehyde (using acetone-alcoholic sodium hydroxide).
7. Preparation of *p*-aminobenzoic acid from *p*-nitrobenzoic acid.
8. Preparation of *m*-dinitrobenzene from nitrobenzene.
9. Preparation of benzoic acid from toluene.

Two stage preparations

10. Preparation of *p*-bromoaniline from acetanilide.
11. Preparation of *p*-nitroaniline from acetanilide.
12. Preparation of *m*-nitrobenzoic acid from methyl benzoate.
13. Preparation of methyl orange/methyl red by diazotization and coupling.

Chromatography

14. Paper chromatography: Extraction of spinach (using 1:1 alcohol and Whatmann filter paper)-To be performed by the students.
15. Thin layer chromatography: Separation of green leaf pigments/separation of a mixture of two organic compounds.
16. Column chromatography: Separation of a mixture of two organic compounds.

IV Semester: Practical 4 (Inorganic chemistry)**3 hours per week**

1. Systematic semi-micro qualitative analysis of a mixture of two simple salts (with no interfering radicals).
2. Separation of metal ions (Cu^{2+} , Co^{2+} , Ni^{2+} , Fe^{2+}) using paper chromatography and calculation of R_f values (To be performed by the students)
3. Separation of Mg (II) and Fe (II) by solvent extraction technique.
4. Effluent analysis.

V Semester: Practical 5 (Organic chemistry)**3 hours per week**

1. Organic qualitative analysis of mono functional organic compounds through functional group analysis. Determination of physical constant. Preparation and characterization of a suitable derivative.
2. Isolation of lycopene from tomatoes.
3. Isolation of caffeine from tea leaves.

V Semester: Practical 6 (Physical chemistry)**3 hours per week**

1. Determination of velocity constant for acid catalysed hydrolysis of methyl acetate and determination of energy of activation.
2. Determination of velocity constant for the saponification of ethyl acetate ($a = b$).
3. The study of kinetics of potassium persulphate and potassium iodide colorimetrically.
4. Determination of equivalent conductivity of 0.1 N sodium chloride and verification of DHO equation.
5. Determination of dissociation constant of monochloroacetic acid by conductivity method.
6. Conductometric titration of hydrochloric acid with sodium hydroxide.
7. Potentiometric titration of potassium dichromate with ferrous ammonium sulphate.
8. Determination of Critical Micellar Concentration (CMC) by conductivity method.
9. Determination of pK_a of a weak acid by pH metric method.
10. To construct the phase diagram of two component system (Ex. diphenyl amine-benzophenone) by cooling curve method.
11. Determination of percentage of sodium chloride by miscibility temperature method.
12. Determination of transition temperature of a salt hydrate by thermometric method.
13. Estimation of Cu^{2+} colorimetrically and verification of Beer-Lambert's law.

VI Semester: Practical 7 (Inorganic chemistry)**3 hours per week**

1. Estimation of percentage of iron in haematite using diphenylamine as an internal indicator.
2. Estimation of calcium in lime stone.
3. Estimation of copper in brass.
4. Estimation of zinc using EDTA.
5. Estimation of total hardness of water using EDTA.
6. Gravimetric estimation of barium as barium sulphate.
7. Gravimetric estimation of nickel as nickel dimethyl glyoximate.
8. Preparation of cuprammonium sulphate and determination of λ_{\max} and hence CFSE.
9. Preparation of sodium trioxalatoferrate (III) and estimation of iron.
10. Estimation of nickel using EDTA and standard zinc sulphate.
11. Preparation of ferrous oxalate and its analysis (both iron and oxalate).

VI Semester: Practical 8 (Biochemistry)**3 hours per week**

1. Preparation of buffers and determination of their pH values using pH meter.
2. Estimation of reducing sugars by Hegdorn-Jensen method.
3. Estimation of lactose in milk by Nelson-Somyogi's method.
4. Estimation of creatinine by Jaffe's method.
5. Estimation of inorganic phosphate in food samples by Fiske-Subbarow method.
6. Estimation of total reducing sugars in honey by DNS (dinitrosalicylic acid) method.
7. Isolation of lactose and casein from milk and estimation of lactose by colorimetric method.
8. Estimation of α -amino acids using ninhydrin by colorimetric method.
9. Determination of blood group.
10. Separation of α -amino acids by paper chromatography.
11. Isolation of DNA from onions.
12. Estimation of cholesterol by colorimetric method.

References

Inorganic Chemistry

1. Advanced Inorganic Chemistry, 6th Edition
F. A. Cotton, G. Wilkinson, C. A. Murillo and M. Bochmann-John Wiley & Sons, 1999.
2. Concise Inorganic Chemistry, 5th Edition
J. D. Lee, Blackwell Science, 2001.
3. Inorganic Chemistry, 4th Edition
J. E. Huhe, E. A. Keiter and R. I. Keiter, Pearson Education Asia, 2000
4. Inorganic Chemistry, ELBS 2nd Edition
D. F. Shriver, P. W. Atkins and C. H. Langfor, Oxford Univ. Press 2002.
5. Environmental Chemistry
A. K. De, Wiley Eastern Ltd., 1999.
6. Nuclear and Radiation Chemistry
Sharma B. K, Goel Publishing House, 1987.
7. Modern Inorganic Chemistry
W. L. Jolly, McGraw Hill Co.
8. Principles of Inorganic Chemistry
B. R. Puri and L. R. Sharma, Jauhar S. P-S. N. Chand & Co., 1998
9. Inorganic Chemistry, 3rd Edition (ISE)
A G Sharpe, Addison Wesley, 1989.
10. Basic Inorganic Chemistry, 3rd Edition
F. A. Cotton, G. Wilkinson, P. L. Gaus-John Wiley & Sons, 1995.
11. Essential Chemistry, International Edition
R. Chang, McGraw Hill Co, 1996.
12. University Chemistry, 4th Edition (ISE)
B. H. Mahan & R. J. Myers, Addison Wesley, 1989.
13. Essential Trends in Inorganic Chemistry
C. M. P. Mingos, Oxford Univ Press, 1998
14. Chemistry, 3rd Edition
P. Atkins & L. Jones, W. H. Freeman & Company, 1997.
15. Modern Chemistry, 4th Edition
D. W. Oxiby, H. P. Gills & N. H. Nachtrieb, Saunders College Publishing, 1998.

Organic Chemistry

1. Organic Chemistry, Paula Yurkanis Bruice, Prentice Hall, 2005.
2. Advanced Organic Chemistry
F. A. Carey and R. J. Sundberg, Plenum, 1990.
3. Organic Chemistry, Vol I & II
I. L. Finar, ELBS, 1986, 1991, 2005
4. Organic Chemistry
R. T. Morrison and R. N. Boyd, Prentice Hall, 1991
5. Organic Chemistry, Maitland Jones, Jr., W. W. Norton & Company
6. Advanced Organic Chemistry
O. S. Bahl and A. Bahl., S. Chand & Co. 1995
7. Advanced Organic Chemistry

- J. March, John Wiley & Sons, 2008.
8. Understanding Organic Reaction Mechanisms
A. Jacobs, Cambridge Univ Press, 1998.
 9. Organic Chemistry
M. K. Jain, Nagin & Co., 1987
 10. A Guide to Mechanism in Organic Chemistry
P. Sykes, Orient Longman, 2005.
 11. Organic Spectroscopy
V. R. Dani, Tata McGraw Hill, 1998.
 12. Organic Spectroscopy
W. Kemp, ELBS IV Edition, 1998.
 13. Synthetic Drugs
G. R. Chatwaal, Himalaya Publications, 2000.

Physical Chemistry

1. Physical Chemistry, 7th Edition - P. W. Atkins and Julio de Paula, Oxford Univ. Press, 2002.
2. The Elements of Physical Chemistry, 3rd Edition - Peter Atkins, Oxford Univ. Press, 2000.
3. Physical Chemistry - A molecular Approach
Donal A. McQuarrie and John D. Simon, Viva Low-priced Student Edition, 2001.
4. Introduction to Physical Chemistry, 3rd Edition
Mark Ladd, Cambridge Low-Priced Edition, 1999.
5. Text Book of Physical Chemistry - S. Glasstone, MacMillan India Ltd., 1998.
6. Principles of Physical Chemistry, 4th Edition
B. R. Puri and L. R. Sharma and M. S. Pathania, S. L. N. Chand & Co., 1987
7. Text Book of Physical Chemistry - P. L. Soni., S. Chand & Co., 1993.
8. Physical Chemistry - Alberty R. A. and Silbey R. J. John Wiley & Sons, 1992.
9. Physical Chemistry - G. M. Barrow, McGraw Hill, 1986.
10. Physical Chemistry, 3rd Edition - Gilbert W. Castellan, Narora Publishing House, 1985.
11. Text Book of Polymer Science - Billmeyer, Dr. F. W. John Wiley & Sons, 1984.
12. Basic Physical Chemistry - Walter J. Moore, Prentice Hall, 1972.

Biochemistry

1. Concise Text Book of Biochemistry - T. N. Pattabhiraman, All India Publishers, 2000.
2. Biochemistry - A. L. Lehninger et. al., CBS, 2000.
3. A Text Book of Biochemistry - A. V. S. S. Rama Rao, UBSPD, 1998.
4. Biochemistry - P. C. Champe and R. A. Harvey, J. B. Lipincott & Co, 1982.
5. Fundamentals of Biochemistry - J. L. Jain, S. Chand & Co., 1983.
6. Biochemistry - COSIP-ULP, Bangalore University, 1981.
7. Outlines of Biochemistry - Conn E. E and Stumpf P. K., John Wiley & Sons, 1978.
8. General Biochemistry - Weil J. H., Wiley Eastern
9. Biochemistry - Campbell M. K., Harcourt Brace & Co.

BANGALORE



UNIVERSITY

B.Sc., (COMPUTER SCIENCE)

DEGREE COURSE

UNDER - SEMESTER SYSTEM

(Y2K 12 SCHEME)

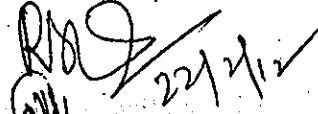

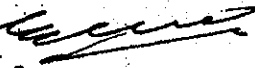

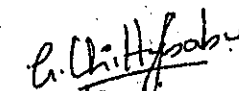
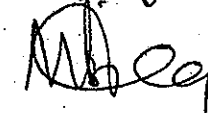
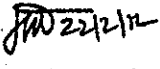
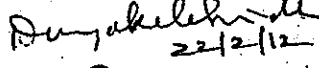
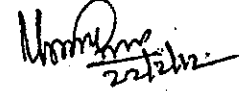
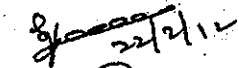

[REVISED w.e.f. 2012-'13]

JNANA BHARATHI

Psychological Counseling Building, Bangalore – 56

PROCEEDINGS OF THE BOARD OF STUDIES MEETING IN MASTER OF COMPUTER APPLICATIONS (UG & PG) HELD IN THE MCA PROGRAMME, PSYCHOLOGY BUILDING, JNANABHARATHI CAMPUS, BANGALORE - 56, ON 22.02.12

The following members attended the meeting:

Dr. P. Nagabhushan	Member	
Dr. Deepak D' Souza	Member	
Dr. Muralidhara B. L.	Member	
Dr. Dilip Kumar	Member	
Dr. Sudeendra	Member	
Mr. Chitty Babu G.	Member	
Mr. M.T. Somashekara	Member	
Ms. Sunitha Watts	Member	
Ms. Durgakala Sridhar	Member	
Mr. Murugan K.	Member	
Mr. Vijay Kumar	Member	
Dr. Hanumanthappa M.	Chairman	

Dr. P. S. Hiremath, Dr. Arun Agarwal and Mr. Nagarajan could not attend the meeting.

The committee discussed the following matters and made resolutions as indicated below:

Item I: Approval of the Panel of Ph. D Examiners for Ms. Chetana Hegde Lakshminarayana
Committee finalized the Panel of Examiners of Ms. Chetana Hegde Lakshminarayana.

Item II: Change of Syllabus for MCA, M.Sc. (CS) and B.Sc. (CS)


The revised scheme and syllabi are prepared. The Chairman is authorized to explore the contents with consultation of local members.

Item III: Ph.D. Course work syllabus


The papers for Ph.D. course work and syllabi are prepared. The Chairman is authorized to explore the contents with consultation of local members.

The Chairman thanked all the members present for their active participation in the meeting.


Dr. P. Nagabhushan


Dr. Deepak D' Souza



Dr. Muradhara B. L

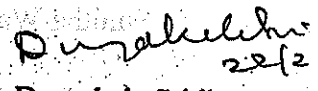

Dr. Dilip Kumar

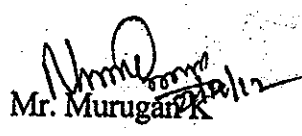
Dr. Sudeendra

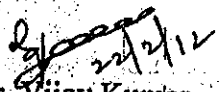

Mr. M.T. Somashekara



Mr. Chitty Babu G


Ms. Sunitha Watts


Ms. Durgakala Sridhar


Mr. Murugan K


Mr. Vijay Kumar


Dr. HANUMANTHAPPA M.
CHAIRMAN
BOS IN CS (UG & PG)

Dr. M. HANUMANTHAPPA
Co-ordinator
MCA Programme, Psychology Building
Bangalore University, Jnanabharathi Campus,
BANGALORE-560 056

**REGULATIONS, SCHEME OF STUDY AND EXAMINATION
FOR B.SC (COMPUTER SCIENCE) DEGREE COURSE
UNDER SEMESTER SYSTEM**

(Y2K12 SCHEME) (REVISED W.E.F. 2012–2013)

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- a
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2/2
- R1.** a) Title of the course: **Bachelor of Computer Science**
b) Duration of the Course: The course shall be of three years duration spread over six semesters.
c) Scheme of study
i) There shall be one theory paper and one practical paper from first semester to fourth semester. The practical paper corresponds to theory papers.
ii) There shall be two theory papers and two practical papers during fifth semester.
iii) There shall be two theory papers, one practical paper and one project work during sixth semester.
iv) The project work shall be carried out either independently or jointly (maximum of two students per group).
v) Medium of Instruction: The medium of instruction shall be English.
d) Scheme of Examination
At the end of each semester there shall be University examination of three hours duration in each of the theory and practical papers.
At the end of the sixth semesters each student shall have to submit the completed project report for the evaluation which shall be certified by internal and external guide and duly signed by the Principal/Chairman/Head/Course Coordinator.

The question paper pattern for theory paper has two sections. (70 Marks)

- a) Section –A, contains 12 questions, students has to attend 10 questions. Each carries 2 Marks (10 * 2 = 20)
b) Section – B, contains 5 either or type questions, each carries 10 Marks (5 * 10 = 50)

- R2.** Each semester shall be of 90 working days from the date of commencement of the each Semester.
- R3.** Attendance: As per Bangalore University regulations in force for science degree courses.
- R4.** A Candidate is allowed to carry over all the previous unleared (failed) theory papers and/practical to subsequent semesters as per Bangalore University regulations in force for science degree courses.
- R5.** The maximum period for completion of the course shall be six years from the date of admission.
- R6.** Eligibility for admission:
a) Any student who has passed II PUC/Equivalent with one paper of Mathematics as Compulsory with a minimum of 35% marks.

R7. Admission Procedure:

- Through Counseling in respective colleges.
- Reservation: As per the notifications/Govt. orders from the University/Govt. from time to time.
- Tuition and other fees: As fixed by the University from time to time.

R8. The total number of students to be admitted to the course shall be as decided by the University.

R9. Results: Results of candidate shall be declared as per the procedure followed by the University for B.Sc. courses.

R10. POWER TO REMOVE DIFFICULTIES

- If any difficulty arises in giving effect to the provisions of these regulations, the Vice – Chancellor may by order make such provisions not inconsistent with the Act, Statutes, Ordinances or other Regulations, as appears to be necessary or expedient to remove the difficulty.
- Every order made under this rule shall be subject to ratification by the appropriate University Authorities.

**Title of Papers and Scheme of Study & Examination for B.Sc
(Bachelor of Computer Science), Revised w.e.f. 2012– 2013**

Sem	Paper	Title of the paper	Hrs/ Wk	Theory	Practical	CE	Total Marks
				Max. Marks	Max. Marks		
I	CS1T	Problem Solving through C Programming	4	70	30	-	100
	CS1P	C Programming Lab	3				
II	CS2T	Logic Design and Unix Programming	4	70	30	-	100
	CS2P	UNIX Programming Lab	3				
III	CS3T	Data Structures and Algorithms	4	70	30	-	100
	CS3P	Data Structures Lab using C	3				
IV	CS4T	Software Engineering and Database System	4	70	30	-	100
	CS4P	Database System Lab	3				
V	CS5T1	Computer Graphics	3	70	30	-	100
	CS5P1	Computer Graphics Programming Lab	3				
	CS5T2	Web Programming	3				
	CS5P2	Web Programming Lab	3				
VI	CS6T1	Object Oriented Programming using JAVA	3	70	30	-	100
	CS6P1	Java Programming Lab	3				
	CS6T2	Computer Networks	3				
	CS6P2	Project	3				

Note: 1) *The practical classes during the course of the semester shall be as in other science courses.*

2) *Examination for Theory/Practical shall be of three hours duration.*

3) *The papers should be taught only by people who have specialization in the area.*

4) *For theory papers the paper number may be suffixed with T and for practical papers with P.*

5) *Any further requirement in the matter may be decided by the Chairman, BOS in Consultation with BOS members.*

CS1T - Problem Solving through C Programming

Total Teaching Hours : 60

No of Hours / Week : 04

Unit-I

Introduction to Programming Concepts - Software, Classification of Software, Modular Programming, Structured Programming, Algorithms, Pseudocode and Flowcharts with examples. History of C, Character set, C tokens, Identifiers, Keywords, Data types, Variables, Constants, Symbolic Constants - Structure of C Program - Operators in C, Hierarchy of Operators, Expressions, Library Functions and type conversions. 12 Hours

Unit-II

Input/Output Statements - Formatted and Unformatted I/O Statements, scanf(), printf(), Decision Making Statements - If Statements, Switch, Looping - while, do-while, for loop, Nested loop, break, continue, and goto statements. Functions - Definition, prototyping, types of functions, passing arguments to functions, Nested Functions, Recursive functions. 12 Hours

Unit-III

Arrays - Declaring and Initializing, One Dimensional Arrays, Two Dimensional Arrays, Multi Dimensional Arrays - Passing arrays to functions. Handling Character Strings - Declaring and Initializing strings, Operations on strings, Arrays of strings, passing strings to functions. Storage Classes - Automatic, External, Static and Register Variables. 12 Hours

Unit-IV

Structures - Declaring and Initializing, Nested structure, Array of Structure, Passing structures to functions, Unions, typedef, enum, Bit fields. Pointers - Declarations, Pointer arithmetic, Pointers and functions, Call by value, Call by reference, Pointers and Arrays, Arrays of Pointers, Pointers and Structures. Meaning of static and dynamic memory allocation, Memory allocation functions. 12 Hours

Unit-V

Files - File modes, File functions, and File operations, Text and Binary files, Command Line arguments. C Preprocessor directives, Macros - Definition, types of Macros, Creating and implementing user defined header files. 12 Hours

TEXT BOOKS

1. E. Balaguruswamy, "Programming In ANSI C", 4th edition, TMH Publications, 2007
2. Ashok N. Kamthane, "Programming with ANSI and Turbo C", Pearson Education, 2007

REFERENCES BOOKS

1. Ashok N. Kamthane et. al., Computer Programming and IT (for RTU), Pearson Education, 2011
2. Mahapatra, "Thinking in C", TMH Publications, 2011
3. Kanetkar, "Let Us C", BPB Publications, 2007

CS1P - C Programming Lab

PART - A

- 1) Write a C program to accept employee number, employee name, basic pay and calculate gross salary, deduction and find the net salary of an employee for the following details.

Dearness Allowance	40% of Basic Pay
House Rent Allowance	20% of Basic Pay
Provident Fund	12% of Basic Pay
Income Tax	4% of Basic Pay

- 2) Write a C Program to find the roots of the given quadratic equation using if .. else if statement.
- 3) Write a menu driven C program to find ,
 - i. Reverse of a number
 - (ii) Factorial of N (Use Switch case)
- 4) Write a C program to find Sin(x). [$x - x^3/3! + x^5/5! - \dots - x^n/n!$]
- 5) Write a C program to arrange the given set of numbers in ascending and descending order.
- 6) Write a C program to find product of two N X M matrices.
- 7) Write a C program to calculate $NCR = N! / R! * (N-R)!$ Using function.
- 8) Write a C program to display Fibonacci series using recursive function.
- 9) Write a C program to compare two strings using pointers..
- 10) Write a C program to demonstrate the user defined header file.

PART-B

During practical examination the External and Internal examiners may prepare exam question paper related to theory syllabus apart from Part-A. (A minimum of 10 Programs has to be prepared).

Note :

a) The candidate has to write both the programs One from Part-A and other from Part-B and execute one program as of External examiner choice.

b) A minimum of 10 Programs has to be done in Part-B and has to be maintained in the Practical Record.

c) Scheme of Evaluation is as follows:

Writing two programs	- 10 (5 Marks for each)
Execution of one program	- 10 Marks
Record	- 5 Marks
Viva	- 5 Marks
Total	- 30 Marks

CS2T – Logic Design and Programming in Unix

Total Teaching Hours :60

No. of Hours / Week : 04

Unit-I

Introduction to number systems – positional and non-positional, Base/ Radix. Decimal number system –

Definition, digits, radix/base. Binary number system – Bit, Byte, Conversions: Binary to Decimal and Decimal to Binary. Octal number system – Conversion from Octal to Decimal, Decimal to Octal, Octal to Binary and binary to Octal. Hexadecimal number system-Conversions: Decimal to Hex, Hex to decimal, Hex to Binary, Binary to Hex, Octal to Hex , Hex to Octal. Binary arithmetic- binary addition, subtraction, multiplication and division (only Integer part). 1's and 2's complement – 2's complement subtraction. Binary codes: BCD numbers, 8421 code, 2421 code- examples and applications. Gray code- Conversions- Gray to binary and Binary to Gray, application of gray code (Mention only). Excess – 3 code - Self complementing property and applications. Boolean algebra: - Laws and Theorems. AND, OR, NOT Laws, Commutative law, Associative law, Distributive law, Duality theorem. Demorgan's theorems – Statements, proof using truth tables; Simplification of Boolean expressions using Boolean laws. Definition of product term, sum term, min term , max term, SOP, standard SOP, POS and Standard POS. Conversion of Boolean expression to Standard SOP and Standard POS forms. 12 Hours

Unit-II

Karnaugh maps- Definition of Karnaugh map, K- map for 2, 3 and 4 variables. Conversion of truth tables into k-map, grouping of cells, redundant groups and don't care conditions. Karnaugh map technique to solve 3 variable and 4 variable expressions. Simplification of 3 and 4 variable Boolean

expression using K-maps (SOP only). AND Gate: Definition, symbol, truth table. OR Gate: Definition, symbol, truth table. NOT Gate: Definition, symbol, truth table. NAND Gate: Definition, symbol, truth table. NOR Gate: Definition, symbol, truth table. Exclusive OR Gate: Definition, symbol, truth table. Exclusive NOR Gate: Definition, symbol, truth table. Combinational logic circuits: Definition, applications. Half Adder: Symbol, Logic circuits using XOR and basic gates, Truth table. Full Adder: Symbol, Logic circuits using XOR and basic gates, Truth table. 12 Hours

Unit-III

History of Unix, salient features, Unix Components, types of shell, Internal and External commands Files and File Organization- Categories of files, Unix file system, directories, file related commands Directory related commands, wild cards, Printing and Comparing files. Ownership of files, File attributes File permissions and Manipulations. 12 Hours

Unit-IV

Standard I/O, Redirection, pipe, filter, Introduction to vi editor, The three modes of the vi editor, Invoking vi editor, Configuring the vi environment, Regular expressions, the grep command, The process - parent and child process, process creation, process related commands, the communication process, communication related commands, Introduction to system administrator, Role of a system administrator, Managing Disk space. 12 Hours

Unit-V

Shell Programming - shell script features, shell variables, writing and executing a shell script, positional parameters, Branching control structures- if, case etc., Loop control structures - while, until, for, etc., Jumping control structures - break, continue, exit, etc., Integer and Real arithmetic in shell programs, Debugging scripts, Structure of an awk script, Operational mechanism of awk, variables, operators, awk control structures, functions in awk, Arrays concepts. 12 Hours

TEXT BOOKS

1. M.G.Venkateshmurthy "Introduction to UNIX & SHELL Programming, Pearson Education
2. Forouzan : Unix and Shell Programming, 1st Edition, 2008 Cengage Learning India
3. Malvino and Leach : Digital Principles and Applications 5th Edition. TMH

REFERENCE BOOKS

- 1) Glass, Unix for Programmers and Users, 3/e Pearson Education, 2006
- 2) Kernighan, The Unix Programming Environment
- 3) Sobell G, A practical Guide to Unix System, 3rd Edition, Pearson Publication, 1994

CS2P – Logic Design and Programming in Unix Lab

PART – A

- 1) Write a menu driven program to calculate ,
 - i. Simple interest (ii) Compound interest
- 2) To print all prime numbers between m and n ($m < n$).
- 3) Reverse a given number and check whether it is palindrome or not.
- 4) Shell script to find maximum and minimum of given set
- 5) To count the number of vowels in a given string.
- 6) Create a file containing the following fields: student No., student name, age, sex, height and weight. Print all the details in a neat format.
- 7) Write a C program to generate and print the GCD and LCM of two integers.
- 8) Shell script to take two numbers as arguments and output their sum using (i) bc (ii) expr.
Include error checking to test whether two arguments were entered.
- 9) Find out the occurrences of three consecutive and identical word characters (like aaa or bbb) using (i) grep and (ii) sed.
- 10) Shell script to display all the file permissions.

PART – B

During practical examination the External and Internal examiners may prepare exam question paper related to theory syllabus apart from Part-A. (A minimum of 10 Programs has to be prepared).

Note :

- a) The candidate has to write both the programs One from Part-A and other from Part-B and execute one program as of External examiner choice.
- b) A minimum of 10 Programs has to be done in Part-B and has to be maintained in the Practical Record.
- c) Scheme of Evaluation is as follows:

Writing two programs	- 10 (5 Marks each)
Execution of one program	- 10 Marks
Record	- 5 Marks
Viva	- 5 Marks
Total	- 30 Marks



FOR QUALITY & EXCELLENCE
IN HIGHER EDUCATION
A GRADE 3.11
ACCREDITED BY NAAC

BANGALORE UNIVERSITY

REGULATIONS, SCHEME AND SYLLABUS

(Approved in the BOS meeting held on 10.10.2009)

for the BACHELOR OF SCIENCE(B.Sc.)course

Mathematics Papers of I to VI Semesters

(Semester System - Y2K10 scheme)

Revised w. e. f.
Academic Year 2010 – 2011

DEPARTMENT OF MATHEMATICS
Central College Campus, Bangalore-560 001

9/12/10

**BANGALORE UNIVERSITY
BANGALORE**

DEPARTMENT OF MATHEMATICS

Proceedings of the adjourned meeting of BOS (UG) held on 10-10-2009 at 4.30 pm in the chambers of the Chairman, Department of Mathematics, Bangalore University, Central College, Bangalore - 1

Members

- | | | |
|-----|---|----------|
| 1. | Dr. Y. B. Maralabhavi
Bangalore University, Bangalore-1 | Chairman |
| 2. | Smt. Chayadevi R.
Maharani Lakshmi Ammanni College, Bangalore-12 | Member |
| 3. | Mr. Narayana Nambiyar
Government Science College, Bangalore - 1. | " |
| 4. | Sri. Gopalappa A.
V.V. Puram College of Science, K. R. Road, Bangalore-4 | " |
| 5. | Sri. Ravi Kumar S.
Rural College, Kanakapura - 562117 | " |
| 6. | Sri. Venkataramana Reddy N.
KGF First Grade College, Oorgaum-563 120 | " |
| 7. | Sri. Rajareddy K.
Govt. First Grade College for Women, Chintamani - 563125 | " |
| 8. | Smt. Vatsala R.
National College, Basavanagudi, Bangalore -4 | " |
| 9. | Dr. B. R. Nagaraj
TIFR Center for Applicable Mathematics, YNT, Bangalore-64 | " |
| 10. | Dr. R. Rangarajan
DOS in Mathematics, Univ. of Mysore, Mysore-6 | " |

The Chairman welcomed the members. The members discussed about the Revision of Syllabus of B.Sc degree Mathematics in detail and approved the contents. Since the topics like Mathematical Modeling and Topology were included in V and VI semesters which require more time for teaching, the members have raised the work load for each paper in V and VI semester from 4 hours per week to 5 hours per week.

Finally, the chairman thanked the members and the members reciprocated the same to the chairman.

Y.B. MARALABHAVI
Chairman
BOS in Mathematics
Bangalore University, Bangalore

Title of Papers and Scheme of Study & Examination
for
B.Sc. (Bachelor of Science) Revised w.e.f. 2010– 2011

Sem.	Paper	Title of the paper	Lec. Hrs/Wk			CE	Total Marks
				Problem working hrs/week	Theory Max. Marks		
I	Math1	Mathematics I	5	2	90	10	100
II	Math2	Mathematics II	5	2	90	10	100
III	Math3	Mathematics III	5	2	90	10	100
IV	Math4	Mathematics IV	5	2	90	10	100
V	Math5	Mathematics V	5	2	90	10	100
V	Math6	Mathematics VI	5	2	90	10	100
VI	Math7	Mathematics VII	5	2	90	10	100
VI	Math8	Mathematics VIII	5	2	90	10	100

Note : In each semester two hours of problem working classes are to be conducted in batches of not more than 15 students in each batch. This should be outside the lecture hours. The work load must be taken in full for the teacher who is handling the problem working classes.

Regulations, Scheme of Study and Examamination for B.Sc. degree course under Semester System

(Revised w.e.f. 2010–2011)

- R 1. a) Title of the course: Bachelor of Science**
- b) Scheme of study:
- i) There shall be one theory paper in Mathematics from first semester to fourth semester. There shall be two theory papers each during fifth and sixth semesters.
 - ii) Medium of Instruction: The medium of instruction shall be English.
- c) Scheme of Examination:
- i) At the end of each semester there shall be University examination of three hours duration in each of the theory papers.
 - ii) Continuous Evaluation (CE) carrying 10 marks in each of theory papers shall be based on the performance of the students in two written tests of one hour duration. No Minimum marks for passing is required in CE.

R 2. Attendance: Attendance requirement will be dealt with as per University rule from time to time.

R 3. Eligibility for admission:

- a) Any student who has passed PUC – II with Mathematics and scoring a minimum of 35% of marks.

R 4. Results:

Results of candidate shall be declared and the classes awarded as per the procedure followed by the University for B.Sc. courses.

R 5. POWER TO REMOVE DIFFICULTIES

- 1) If any difficulty arises in giving effect to the provisions of these regulations, the Vice-Chancellor may by order make such provisions not inconsistent with the Act, Statutes, Ordinances or other Regulations, as appears to be necessary or expedient to remove the difficulty.
- 2) Every order made under this rule shall be subject to ratification by the appropriate University Authorities.

SYLLABUS
FIRST SEMESTER
MATHEMATICS – I

75 HOURS

(5 lecture hours per week + 2 hours of problem working classes) *

1. MATRICES

Elementary row and column transformations (operations) equivalent matrices, Theorem on it. Row- reduced echelon form, Normal form of a matrix, Rank of a matrix, Problems.

Homogeneous and Non – Homogeneous systems of m linear equations in n unknowns consistency criterion – criterion for uniqueness of solutions. Solution of the same by elimination method.

Eigen values and Eigen vectors of a square matrix of order 2 and 3, standard properties. Cayley-Hamilton theorem (with proof). Finding A^{-1}, A^{-2} and A^2, A^3, A^4 .

(15 lecture hours)

2. DIFFERENTIAL CALCULUS

Successive Differentiation - n^{th} derivatives of the functions: e^{ax} , $(ax + b)^n$, $\log(ax + b)$, $\sin(ax + b)$, $\cos(ax + b)$, $e^{ax} \sin(bx + c)$, $e^{ax} \cos(bx + c)$ – Problems

Leibnitz theorem (with proof) and its applications.

Partial differentiation – Function of two and three variables – First and higher derivatives – Homogeneous functions – derivatives- Euler's theorem and its extension (with proof) – Total derivative and differential – Differentiation of implicit functions and composite functions – Problems

Jacobians – Properties of Jacobians Problems.

(20 lecture hours)

3. INTEGRAL CALCULUS

Reduction formulae for $\int \sin^n x \, dx$, $\int \cos^n x \, dx$, $\int \tan^n x \, dx$, $\int \cot^n x \, dx$,

$\int \sec^n x \, dx$, $\int \operatorname{cosec}^n x \, dx$, $\int \sin^m x \cos^n x \, dx$, with definite limit, Differentiation under the integral sign by Leibnitz rule.

(10 lecture hours)

4. ANALYTICAL GEOMETRY OF THREE DIMENSIONS

a) Direction cosines of a line (as components of unit vector) -Direction ratios- Angle between two lines, volume of a tetrahedron with given vertices.

Equation of a line in different forms : one point form, Two points form, Parallel and perpendicular conditions, Intersection of two lines, perpendicular from a point onto a line, Reflection of a point.

Equation of a plane in different forms - Perpendicular from a point on to a line.

Equation of a plane in different forms - Perpendicular from a point onto a plane.

Reflection of a point in a plane.

- b) Angle between two planes - Line of intersection of two planes - Plane coaxial with given planes - Planes bisecting the angle between two planes - Angle between a line and a plane - Coplanarity of two lines - Shortest distance between two lines. Equation of the sphere in general and standard forms - equation of a sphere with given ends of a diameter. Tangent plane to a sphere, orthogonality of spheres Standard equations of right circular cone & right circular cylinder. (30 lecture hrs)

Note: All the derivations (book works) must be through vector methods with reduction to corresponding Cartesian equivalents.

Suggested distribution of lecture hours.

1. Matrices: 1 hour / week
2. Differential calculus and Integral Calculus: 2 hours / week
3. Analytic Geometry of three dimensions: 2 hours / week.

* Two hours of problem working classes are to be conducted in batches of not more than 15 students per teacher, in each batch.

Format of Question Paper: Semester 1

Q. No.	Topic and No. of subdivisions to be set in the topic	No. of subdivisions to be answered	Marks for each subdivision	Maximum Marks for the question
I	Matrices 3	15	2	30
	Diff. Calculus 6			
	Integral Calculus 2			
	Ana Geo(a)5 and(b)4 9			
	Total 20			
II	Matrices 4	2	5	10
III	Diff. Calculus 5	3	5	15
IV	Integral Calculus 3	2	5	10
V	Analytical Geometry Upto plane (a) 5	3	5	15
	VI			

Note: All questions are to be answered

Maximum Marks for the paper

Examination Marks: 90

Internal Assessment Marks: 10

Total Marks: 100

Books for Reference.

1. A R Vashista Matrices, Krishna Prakashana Mandir
2. S Shanthinarayana Differential Calculus, S Chand
3. S Shanthinarayana Integral Calculus, S Chand
4. S Shanthinarayana Elements of Analytical Geometry, S Chand

SECOND SEMESTER

MATHEMATICS – II

(5 lecture hours per week + 2 hours of problem working classes)

75 hours

1. GROUP THEORY

Recapitulation of the definition and standard properties of groups and subgroups. Order of an element of a group – properties related to order of an element – subgroup generated by an element of a group – coset decomposition of a group, Cyclic groups - properties - modulo relation – index of a group – Lagrange's theorem – consequences. (20 lecture hours)

2. DIFFERENTIAL CALCULUS

Polar coordinates - Angle between the radius vector and the tangent - Angle of intersection of curves (polar form) polar sub-tangent and polar subnormal- perpendicular from pole on the tangent - Pedal equations. Derivative of an arc in Cartesian, parametric and polar forms.

Curvature of plane curves - formula for radius of curvature in Cartesian, parametric, polar and pedal forms - centre of curvature - evolutes. Singular points – Asymptotes – Envelopes.

Tracing of standard Cartesian, parametric and polar curves (Cisoid, Strophic, Astroid, Folium of descartes, Catenary, Cycloid, Cardioid, Lemniscate, Equiangular Spiral, Three leaved rose and four leaved rose). (30 lecture hours)

3. INTEGRAL CALCULUS

Applications of Integral Calculus: computation of length of arc, plane area and surface area and volume of solids of revolutions for standard curves in Cartesian and Polar forms. (10 lecture hours)

4. DIFFERENTIAL EQUATIONS

Solutions of ordinary differential equations of first order and first degree:

(i) Homogenous and reducible to homogenous

(ii) Linear equations, Bernoulli equation and those reducible to these.

(iii) Exact equations, equations reducible to exact form with grouping and standard integrating factors.

Equations of first order and higher degree – non linear first order, higher degree - (Mention) solvable for p - solvable for y - solvable for x - Clairaut's equation - singular solution - Geometric meaning. Orthogonal trajectories in Cartesian and polar forms. (15 lecture hours)

Suggested distribution of lecture hours.

1. Group theory : 1 hour / week
2. Differential calculus: 2 hours / week.
3. Integral Calculus: 1 hour / week.
4. Differential Equations: 1 hour / week.

- Two hours of problem working classes are to be conducted in batches of not more than 15 students per teacher, in each batch.

Format of Question Paper: Semester 2

Q. No.	Topic and No. of subdivisions to be set in the topic	No. of subdivisions to be answered	Marks for each subdivision	Maximum Marks for the question
I	Group Theory . 5 Diff. Calculus-Evolute 5 Rest 3 Integral Calculus 3 Diff. Equations 4 Total 20	15	2	30
II	Groups 5	3	5	15
III	Diff. Calculus (upto evolutes) 4	2	5	10
IV	Diff. Calculus (remaining) 3	2	5	10
V	Integral Calculus 3	2	5	10
VI	Diff. Equations 5	3	5	15

Note: All questions are to be answered

Maximum Marks for the paper

Examination Marks: 90

Internal Assessment Marks: 10

Total Marks: 100

Books for Reference.

1. Baumslag & Chandler Group Theory, Schaum Series
2. S Shanthinarayana Differential Calculus, S Chand
3. S Shanthinarayana Integral Calculus, S Chand
4. J B Fraleigh First course in Abstract Algebra, A Wesley
5. M D Raisinghania Advanced Differential Calculus, S Chand
6. I N Herstein Topics in Algebra, Vikas

THIRD SEMESTER

MATHEMATICS - III

(5 Lecture hours per week + 2 hours of problem working classes)

75 hours

1. GROUP THEORY

Normal subgroups-examples and problems-Quotient group-Homomorphism and Isomorphism of groups-Kernel and image of a homomorphism-Normality of the kernel- Fundamental theorem of homomorphism-properties related to isomorphism-Permutation group-Cay ley's theorem. (15 lecture hours)

2. LINEAR PROGRAMMING

Linear inequalities and their graphs. Statement of the linear programming problem in standard form-classification of solutions-solution of linear programming problems by graphical method.

Illustrative examples on the solution of linear programming problems in two and three variables by the simplex method. (Maximization and minimization)

Transportation problem:- North West rule, Vogel's method, Row minima method, Column minima method. (15 lecture hours)

3. SEQUENCES OF REAL NUMBERS

Definition of a sequence – Bounded sequences – limit of a sequences – convergent, divergent and oscillatory sequences – Monotonic sequences and their properties Cauchy's criterion. (12 lecture hours)

4. SERIES OF REAL NUMBERS

Definition of convergence, divergence and oscillation of series – properties of convergent series – properties of series of positive terms – Geometric series.

Tests for convergence of series – p – series – comparison of series – Cauchy's root test – D'Alembert's test, Raabe's test, - Absolute and conditional convergence – D'Alembert test for absolute convergence – Alternating series – Leibnitz test.

Summation of Binomial, Exponential, and Logarithmic series. (18 lecture hours)

5. DIFFERENTIAL CALCULUS

Recaptulation of Equivalence Class and partition of a set.

Definition of the limit of a function in $\epsilon - \delta$ form – continuity – types of discontinuities – properties of continuous function on a closed interval (boundedness, attainment of bounds and taking every value between bounds). Differentiability. Differentiability implies Continuity – converse not true. Role's Theorem – Lagrange's and Cauchy's

First Mean Value Theorems. Taylor's Theorem (Lagrange's form) - Maclaurin's expansion – Evaluation of limits by L'Hospital's rule. (15 lecture hours)

Suggested distribution of lecture hours

1. Groups Theory : 1 hour/ week
2. Linear Programming : 1 hour/ week
3. Sequences and series : 2 hours/week
4. Differential Calculus : 1 hour/ week

- Two hours of problem working classes are to be conducted in batches of not more than 15 students per teacher, in each batch.

Format of Question Paper: Semester 3

Q. No.	Topic and No. of subdivisions to be set in the topic	No. of subdivisions to be answered	Marks for each subdivision	Maximum Marks for the question	
I	Group Theory	4	2	30	
	Linear Programming	3			
	Sequences	4			
	Series	5			
	Diff. Calculus	4			
	Total	20			
II	Group Theory	4	2	5	10
III	Linear Programming	4	3	5	15
IV	Sequence	3	2	5	10
V	Series	5	3	5	15
VI	Diff. Calculus	4	2	5	10

Note: All questions are to be answered

Maximum Marks for the paper

Examination Marks: 90

Internal Assessment Marks: 10

Total Marks: 100

Books for Reference

1. Baumslag & Chandler Group Theory Schaum Series
2. Gupta Goyal Laplace and Fourier Transforms, Pragathi Prakashana Mandir
3. L S Srinath Linear Programming, East West
4. J B Fraleigh First course in Abstract Algebra, A Wesley
5. M D Raisinghanian Advanced Differential Calculus, S Chand

FOURTH SEMESTER

MATHEMATICS - IV

(5 Lecture hours per week + 2 hours of problem working classes)

1. **RINGS, INTEGRAL DOMAINS. FIELDS**
Rings, Types of Rings properties of rings – Rings of integers modulo n – Subrings – Ideals, Principal, Prime and Maximal ideals in a commutative ring – examples and standard properties following the definition-Homomorphism, Isomorphism- Properties – Quotient rings – Integral Domain- Fields - properties following the definition – Fundamental Theorem of Homomorphism of Rings - Every field is an integral domain - Every finite integral domain is a field - Problems(18 lecture hours)
2. **FOURIER SERIES**
Trigonometric Fourier series of functions with period 2π and period $2L$ – Half-range cosine and sine series. (10 lecture hours)
3. **DIFFERENTIAL CALCULUS**
Continuity and differentiability of functions of two and three variables- Taylor's theorem and expansions of functions of two variables-Maxima and minima of functions of two variables. Method of Lagrange multipliers. (10 lecture hours)
4. **INTEGRAL CALCULUS**
Gamma and Beta functions-results following definitions-Relations connecting the two functions-duplication formula-Applications to evaluation of integrals. (10 lecture hours)
5. **DIFFERENTIAL EQUATIONS**
Second and higher order ordinary linear differential equations with constant coefficients-complementary function-particular integrals (standard types)-Cauchy-Euler differential equation. Simultaneous linear differential equations (two variables) with constant coefficients. Solutions of second order ordinary linear differential equations with variable coefficients by the following methods:
(i) When a part of complementary function is given
(ii) Changing the independent variable
(iii) Changing the dependent variable
(iv) Variation of parameters
(v) Conditions for exactness and the solution when the equation is exact . (15 lecture hours)
6. **LAPLACE TRANSFORMS**
Definition and basic properties-Laplace transforms of some common functions and standard results-Laplace transform of periodic functions-Laplace transforms of derivatives and the integral of a function-Laplace transforms, Heaviside function. Convolution theorem (Statement only) Inverse Laplace transforms-Laplace transform method of solving ordinary linear differential equations of first and second orders with constant coefficients. (12 lecture hours)

Suggested distribution of lecture hours

1. Ring Theory and Laplace Transform : 2 hours/ week
2. Differential Equations : 1 hour/ week
3. Fourier series, Differential and Integral Calculus: 2 hours/week

- Two hours of problem working classes are to be conducted in batches of not more than 15 students per teacher, in each batch.

Format of Question Paper: Semester 4

Q.No.	Topic and No. of subdivisions to be set in the topic	No. of subdivisions to be answered	Marks for each subdivision	Maximum Marks for the question
I	Rings 5	15	2	30
	Fourier Series 3			
	Diff. Calculus 3			
	Integral Calculus 3			
	Diff. Equations 4			
	Laplace Transform 2			
	Total 20			
II	Rings 5	3	5	15
III	Fourier Series 3	2	5	10
IV	Diff. and Integral 4	2	5	10
V	Diff. Equations 4	3	5	15
VI	Laplace Transforms 4	2	5	10

Note: All questions are to be answered

Maximum Marks for the paper

Examination Marks: 90

Internal Assessment Marks: 10

Total Marks: 100

Books for Reference

1. I N Herstein Topics in Algebra ,Vikas
2. S Shanthinarayan Differential Calculus ,S Chand
3. S Shanthinarayan Integral Calculus,S Chand
4. M G Smith Laplace Transform theory, Van – Nostrand

**FIFTH SEMESTER
MATHEMATICS - V**

(5 Lecture hours per week + 2 hours of problem working classes) , (75 hours)

1. LINEAR ALGEBRA

Vector space – Examples – Properties – Subspaces – criterion for a subset to be a subspace – linear span of a set - linear combination – linear independent and dependent subsets – Basis and dimensions – Standard properties – Examples illustrating concepts and results.

Linear transformations – properties – matrix of a linear transformation – change of basis – range and kernel – rank and nullity – Rank – Nullity theorem – Non-singular and singular linear transformations - Standard properties – Examples. (22 Lecture hours)

2. GEOMETRY OF SPACE CURVES

Vector function of a single scalar variable – its interpretation as a space curve – derivative – tangent, normal and binormal vectors to a space curve – Serret Frenet formulas with proof – simple geometrical applications. Finding curvature and torsion. Parametric forms.

Vector function of two scalar variables – its interpretation as a surface – Tangent plane and Normal to a surface - Normal line – parametric curves on a surface – parametric curves on the surfaces of a right circular cylinder and sphere – cylindrical to spherical and spherical polar coordinates.

Definition of orthogonal curvilinear coordinates. Fundamental vectors or base vectors, Scale factors or material factors - quadratic differential form. Spherical curvilinear system : Cartesian, Cylindrical – conversion of Cylindrical to orthogonal Spherical polar coordinates. Theorem: The Spherical coordinate system is orthogonal curvilinear coordinate system. (without proof) No problems on conversions of one system to another. (20 lecture hours)

3. VECTOR DIFFERENTIAL CALCULUS

Scalar field – gradient of a scalar field, geometrical meaning – directional derivative – Maximum directional derivative – Angle between two surfaces - vector field – divergence and curl of a vector field – solenoidal and irrotational fields – scalar and vector potentials – Laplacian of a scalar field – vector identities. Standard properties, Harmonic functions, Problems. (15 lecture hours)

FOURIER TRANSFORMS

The Fourier integral, Different forms of F.I, Problems complex Four. Transform, Self reciprocals, slit functions Basic properties of F.T, Linear, Change of scale, Shifting, Modulation. Derivation of a Function Extension.

Fourier sine and cosine Transform and Inverses properties, self reciprocal. The derivatives – theorems and problems. (18 lecture hours)

Suggested distribution of lecture hours.

1. Linear Algebra : 2 hours /week
2. Geometry of space curves and Vector Differential Calculus : 2. hours/week
3. Fourier Transforms. 1 hour/week

- Two hours of problem working classes are to be conducted in batches of not more than 15 students per teacher, in each batch.

Format of Question Paper: Semester 5 – PAPER V

Q. No.	Topic and No. of subdivisions to be set in the topic	No. of subdivisions to be answered	Marks for each subdivision	Maximum Marks for the question
I	Linear Algebra 6 Geometrical Space 5 Vector Diffn. 5 Fourier Transforms 4 Total 20	15	2	30
II	Linear Algebra 6	4	5	20
III	Geometrical Space 5	3	5	15
IV	Vector Diff. Calculus 5	3	5	15
V	Fourier Transforms 4	2	5	10

Note: All questions are to be answered

Maximum Marks for the paper

Examination Marks: 90

Internal Assessment Marks: 10

Total Marks: 100

Books for Reference

1. I N Herstein, Topics in Algebra, Vikas
2. B Spain, Vector Analysis, ELBS
3. D E Bournes P C Kendall, Vector Analysis
4. I N Sneddon, Fourier Transforms, Mc-Graw Hill

FIFTH SEMESTER

MATHEMATICS – VI

(5 lecture hours per week +2 hours of problem working classes)

75 hours

1. TOTAL DIFFERENTIAL EQUATIONS, SIMULTANEOUS EQUATIONS AND PARTIAL DIFFERENTIAL EQUATIONS

Total differential equations-Necessary condition for the equation $Pdx + Qdy + Rdz = 0$

be integrable-Simultaneous equations of the form $\frac{dx}{P} = \frac{dy}{Q} = \frac{dz}{R}$

Formation of partial differential equation .Equations of First Order Lagrange's linear equation – Charpits method Standard types of first order non-linear partial differential equation (By known substitution).

Solution of second order linear partial differential equations in two variables with constant coefficients by finding complementary function and particular integral

Solution of one – dimensional heat equations, Solution of one – dimensional wave equations using Fourier series. (25 lecture hours)

2. SPECIAL FUNCTIONS

Polynomial solution of Legendre differential equation – Legendre polynomials – generating function – Recurrence relations – Rodrigue's formula – orthogonality.

Series Solution of Bessel differential equation – Bessel function $J_n(x)$ – Recurrence relations – generating function – orthogonality. (15 lecture hours)

3. NUMERICAL ANALYSIS

Finite differences – Definition and properties of $\Delta, \nabla, \delta, \mu$ and E , the relation between them – The n th differences of a polynomial, Factorial notations, separation of symbols, divided differences and related theorems.

Newton – Gregory forward and backward interpolation formulae – Lagrange's and Newton's interpolation formulae for unequal intervals - Inverse interpolation.

Numerical differential using forward and backward difference formulae - Computation of first and second derivatives.

Numerical Integration : Quadrature formula – Trapezoidal rule -Simpson's 1/3 and 3/8 rule(without proofs) and problems. (20 lecture hours)

4. **Mathematical Modeling**

Basic concepts. Real world problems, (Physics, Chemistry, Biology etc)
Approximation of the problem, Steps involved in modeling.

Mathematical models: Linear growth and decay model, Logistic model, model of Mass spring-dashpot (present in shock absorber. mechanical engineering problems)

Drug absorption from blood stream. Motion of a projectile. Current flow in electrical circuits, Vibration of string. (15 lecture hours)

Suggested distribution of lecture hours

1. Total and simultaneous Partial Differential Equations. 2: hours /week
 2. Special functions: 1 hour/week
 3. Numerical Analysis and Mathematical Modelling : 2hours/ week
- Two hours of problem working classes are to be conducted in batches of not more than 15 students per teacher, in each batch.

Format of Question Paper: Semester 5 – PAPER VI

Q. No.	Topic and No. of subdivisions to be set in the topic	No. of subdivisions to be answered	Marks for each subdivision	Maximum Marks for the question	
I	Total, Sim and p.d.e	6			
	Spl. Functions	5			
	Numerical Analysis	5	15	30	
	Mathematical model	4			
	Total	20			
II	Total, Sim. and pde	6	4	5	20
III	Spl. Functions	5	3	5	15
IV	Numerical Analysis	5	3	5	15
V	Mathematical model	4	2	5	10

Note: All questions are to be answered

Maximum Marks for the paper

Examination Marks: 90

Internal Assessment Marks: 10

Total Marks: 100

Books for Reference

1. I N Sneddon, An Introduction to PDE, Mc-Graw Hill
2. M K Jain, Iyengar, Jain Numerical methods for scientific & Eng Computation, Wiley Eastern Ltd.
3. J N Kapur, Mathematical Modelling, Wiley Eastern Ltd.
4. Martin Braun, Differential Equns and its applications Springer Verlag
5. M D Raisinghania, Advanced Differential Calculus, S Chand
6. Saran, Sharma, Trivedi Special Functions, Pragathi Prakashana Mandir
7. Coleman C. S and Drew D A, Differential Equation Models, Springer Verlag

SIXTH SEMESTER

MATHEMATICS – VII

(5 Lecture hours per week + 2 hours of problem working classes)

(75 hours)

1. COMPLEX ANALYSIS

Complex numbers - The complex plane-conjugate and modulus of a complex number-polar form-geometrical representation- Euler's formula: $e^{i\theta} = \cos\theta + i\sin\theta$

Function of a complex variable : Limit, continuity and differentiability.

Analytic function-Cauchy-Riemann equations in Cartesian and polar forms-Sufficiency conditions for analyticity in Cartesian form – standard properties of analytic functions-construction of analytic functions, given real or imaginary parts- Milne-Thomson method.

Transformations -definition of a conformal transformation. Examples.

Discussion of transformations : $w = z^2$, $w = \sin z$, $w = \cos z$, $w = e^z$, $w = \cosh z$, $w = \left(z + \frac{1}{z} \right)$

The bilinear transformation-cross ratio property-bilinear transformation transforms circles into circles or lines-problems thereon.

The complex line integral-Examples and properties. Cauchy's integral theorem (proof using Green's theorem) and its direct consequences. The Cauchy's integral formula for the function and the derivatives. Applications to evaluation of simple line integrals- Cauchy's inequality-Liouville's theorem-Fundamental theorem of algebra.

(30 lecture hours)

2. LINE AND MULTIPLE INTEGRALS

Definition of line integral and basic properties—examples on evaluation of line integrals.

Definition of a double integral – its conversion to iterated integrals – evaluation of double integrals by change of order of integration and by change of variables – Computation of plane and surface areas, volume underneath a surface and volume of revolution using double integrals.

Definition of a triple integral and evaluation - change of variables – volume as a triple integral.

(20 Lecture hours)

3. INTEGRAL THEOREMS

Green's theorem (with proof). Direct consequences of the theorem.

The Divergence theorem (with proof) – Direct consequences of the theorem.

The Stokes' theorem (with proof) – Direct consequences of the theorem.

(10 Lecture hours)

4. TOPOLOGY

Topology Definition, Open sets, Accumulation Points, interior, Exterior, Boundary, neighbourhood system, bases and sub bases, Bolzano-Weirstrass theorem (without proof), close set Heine-Borel theorem (without proof) Completeness, Topology of the line and plane. (15 lecture hours)

Suggested distribution of lecture hours :

1. Complex Analysis : 2 hours / week.
 2. Line and Multiple Integrals and Integral Theorems : 2 hours / week
 3. Topology : 1 hour/week
- Two hours of problem working classes are to be conducted in batches of not more than 15 students per teacher, in each batch.

Format of Question Paper: Semester 6 - PAPER VII

Q. No.	Topic and No. of subdivisions to be set in the topic	No. of subdivisions to be answered	Marks for each subdivision	Maximum Marks for the question
I	Complex Analysis (upto transformation) 5 Remaining 3 Line and Multiple Int. 5 Int. Theorems 3 Prob. Distribution 4 Total 20	15	2	30
II	Complex Analysis (upto transformation) 5	3	5	15
III	Complex Analysis Remaining 3	2	5	10
IV	Line and Multiple Int. 5	3	5	15
V	Int. Theorems 3	2	5	10
VI	Topology 4	2	5	10

Note: All questions are to be answered

Maximum Marks for the paper

Examination Marks: 90

Internal Assessment Marks: 10

Total Marks: 100

Books for Reference

1. S Shanthinarayana Complex Analysis, S Chand
2. A R Vashista Complex Analysis, Krishna Prakashana Mandir
3. Saxena Finite Diff. Calculus & Numerical Analysis, S Chand
4. B Spain Vector Analysis, ELBS
5. Seymour Lipschutz General Topology, Schaum Series Chap 4 & 5

**SIXTH SEMESTER
MATHEMATICS - VIII**

(5 Lecture hours per week + 2 hours of problem working classes)

(75 hours)

1. PARTICLE DYNAMICS

- a) Newton's laws of motion – Conservative forces and potential energy - Definitions of work, kinetic energy and power.
Motion of a particle in a uniform force field – simple harmonic motion – Two dimensional motion of projectiles, Inclined plane.
- b) Tangential and Normal components of velocity and acceleration – Radial and Transverse components of velocity and acceleration - Constrained Motion of a particle under gravity along inside and outside of a circle.
Central force and central orbit – Theorem – Motion of a particle in a central force field, Both polar and Pedal forms – Determination of orbit from central forces and vice versa. (30 lecture hours)

2. CALCULUS OF VARIATIONS

Variation of a function $f = f(x, y, y')$ – variation of the corresponding functional – extremal of a functional – variational problem – Euler's equation and its particular forms – Examples – standard problems like geodesics, minimal surface of revolution hanging chain, Brachistochrone problem – Isoperimetric problems. (15 Lecture hours)

3. NUMERICAL ANALYSIS

- a) Solution of Algebraic and transcendental equations, method of successive bisection, method of false position and Newton-Raphson method.
Numerical solutions of non-homogeneous system - linear algebraic equations in 3 variables by Jacobi's and Gauss-Seidel methods-Computation of largest Eigen value of a square matrix by power method. Using Inverse Power Method Finding Least Eigen Value
- b) Solution of initial value problems by ordinary linear first order differential equations by Taylor's series, Euler's, modified Euler's, Picard's Method, Runge-Kutta method order four
Difference Equations : Basic definitions, order and degree, solution, formation of 1st and 2nd order, linear difference equation with constant coefficients, rules for finding CF.
Form Fibonacci difference equation and solve. Finding PI when $f(E) y_n = a^n$, $\cos kn$, $\sin kn$, $a^n \cos kn$, $a^n \sin kn$, $f(n)$, $a^n f(n)$. (30 lecture hours)

Suggested distribution of teaching work:

1. Particle Dynamics : 2 hours/week
 2. Calculus of variation : 1 hour/ week
 3. Numerical Analysis : 2 hours/week
- Two hours of problem working classes are to be conducted in batches of not more than 15 students per teacher, in each batch.

Format of Question Paper : Semester 6 - PAPER VIII

Q. No.	Topic and No. of subdivisions to be set in the topic	No. of subdivisions to be answered	Marks for each subdivision	Maximum Marks for the question
I	Partical Dynamics			
	(upto projectile) (a) 4	15	2	30
	Remaining (b) 4			
	Calculus of Variation 4			
	Numerical Analysis			
	upto Eigen value (b) 4			
Remaining part (NA)(b)4				
	Total 20			
II	Partical Dynamics (upto projectile) 4	3	5	15
III	Partical Dynamics Remaining 4	2	5	10
IV	Calculus of Variation 3	2	5	10
V	Numerical Analysis upto Eigen value 4	2	5	10
VI	Remaining part (NA) 4	3	5	15

Note: All questions are to be answered

Maximum Marks for the paper

Examination Marks: 90

Internal Assessment Marks: 10

Total Marks: 100

Books for Reference

1. Choriton, Text book of Dynamics, Van – Nostrand
2. C Fox, An introduction to the calculus of variation Oxford university press
3. S. Armugam and Somasundaram, ISAAC, Numerical Methods SCITECH publications

4797-BUP-300-Dec. 2009

ಬೆಂಗಳೂರು



ವಿಶ್ವವಿದ್ಯಾಲಯ

ಸಂಖ್ಯೆ:ಎಸಿಎ-2:ಎ3:ಸ್ನಾತಕ.ಪ.ಸೆ.ಪ/ಪ.ಕ್ರ/2004-05

ಜ್ಞಾನಭಾರತಿ,

ಬೆಂಗಳೂರು -560 56.

ದಿನಾಂಕ:13-5-2004

ಅಧಿಸೂಚನೆ

ವಿಷಯ: 2004-05ನೇ ಶೈಕ್ಷಣಿಕ ಸಾಲಿನಿಂದ ಸ್ನಾತಕ ಪದವಿ ಕೋರ್ಸುಗಳಲ್ಲಿ ವಿಜ್ಞಾನ ನಿಖಾಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ಸೆಮೆಸ್ಟರ್ ಪದ್ಧತಿಯ ಪಠ್ಯಕ್ರಮಗಳನ್ನು ಜಾರಿಗೊಳಿಸುವ ಬಗ್ಗೆ.

- ಉಲ್ಲೇಖ: 1. ದಿನಾಂಕ: 18-12-2003ರಂದು ನಡೆದ ವಿಜ್ಞಾನ ನಿಖಾಯದ ಸಭೆಯ ನಿರ್ಣಯ.
2. ದಿನಾಂಕ:27-4-2004ರಂದು ನಡೆದ ಮುಂದೂಡಲ್ಪಟ್ಟ ವಿದ್ಯಾವಿಷಯಕ ಪರಿಷತ್ತಿನ ಸಭೆಯ ನಿರ್ಣಯ.

ದಿನಾಂಕ: 27-4-2004ರಂದು ನಡೆದ ವಿದ್ಯಾವಿಷಯಕ ಪರಿಷತ್ತಿನ ಸಭೆಯಲ್ಲಿ ಕೈಗೊಂಡ ನಿರ್ಣಯದನ್ವಯ ವಿಜ್ಞಾನ ನಿಖಾಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ ಈ ಕೆಳಕಂಡ ಸ್ನಾತಕ ಪದವಿ ಕೋರ್ಸುಗಳಲ್ಲಿ ಸೆಮೆಸ್ಟರ್ ಪದ್ಧತಿಯ ಪಠ್ಯಕ್ರಮಗಳನ್ನು ಅವುಗಳ ಮುಂದೆ ನಮೂದಿಸಿದಂತೆ 2004-05ನೇ ಶೈಕ್ಷಣಿಕ ಸಾಲಿನಿಂದ ಜಾರಿಗೊಳಿಸಲು ವಿಶ್ವವಿದ್ಯಾಲಯವು ಅಧಿಕೃತವಾಗಿ ಈ ಮೂಲಕ ಪ್ರಕಟಿಸಿದೆ ಹಾಗೂ ಈ ಸೆಮೆಸ್ಟರ್ ಪದ್ಧತಿಯು ಕೇವಲ ಸ್ನಾತಕ ರೆಗ್ಯುಲರ್ ಕೋರ್ಸುಗಳಿಗೆ ಮಾತ್ರ ಅನ್ವಯಿಸುತ್ತದೆ. ಇದು ಅಂಚೆ ತೆರಪಿನ ಮತ್ತು ದೂರ ಶಿಕ್ಷಣಕ್ಕೆ ಅನ್ವಯಿಸುವುದಿಲ್ಲ.

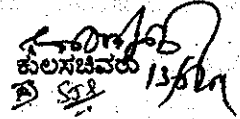
Bio-Tech

ಕ್ರ.ಸಂ.	ಕೋರ್ಸುಗಳ ವಿವರ	Name of the course	ಅನುಮೋದಿಸಿದ ಪಠ್ಯಕ್ರಮಗಳು
1.	ಭೌತಶಾಸ್ತ್ರ	Physics	I ರಿಂದ VI
2.	ರಸಾಯನಶಾಸ್ತ್ರ	Chemistry	I ರಿಂದ VI
3.	ಜೀವರಸಾಯನಶಾಸ್ತ್ರ	Biochemistry	I ರಿಂದ VI
4.	ಗಣಿತ	Mathematics	I ರಿಂದ VI
5.	ಸಂಖ್ಯಾಶಾಸ್ತ್ರ	Statistics	I ರಿಂದ VI
6.	ಮನಃಶಾಸ್ತ್ರ	Psychology	I ರಿಂದ VI
7.	ರೇಷ್ಮೆ ಕೃಷಿ	Sericulture	I ರಿಂದ VI
8.	ಭೂಗೋಳ ಶಾಸ್ತ್ರ	Geography	I ರಿಂದ VI
9.	ಸಸ್ಯಶಾಸ್ತ್ರ	Botany	I ರಿಂದ VI
10.	ಅನ್ವಯಿಕ ಸಸ್ಯಶಾಸ್ತ್ರ	Applied Botany	I ರಿಂದ VI

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ಕ್ರ.ಸಂ.	ಕೋರ್ಸುಗಳ ವಿವರ	Name of the course	ಅನುಮೋದಿಸಿದ ಪಠ್ಯಕ್ರಮಗಳು
11.	ಪರಿಸರ ವಿಜ್ಞಾನ	Environmental Science	I ರಿಂದ VI
12.	ತಳಶಾಸ್ತ್ರ	Genetics	I ರಿಂದ VI
13.	ಗೃಹ ವಿಜ್ಞಾನ	Home Science	I ರಿಂದ VI
14.	ಭೂವಿಜ್ಞಾನ	Geology	I ರಿಂದ VI
15.	ಪ್ರಾಣಿಶಾಸ್ತ್ರ	Zoology	I ರಿಂದ VI
16.	ಸೂಕ್ಷ್ಮಜೀವಶಾಸ್ತ್ರ	Microbiology	I ರಿಂದ VI
17.	ಜೀವತಂತ್ರಜ್ಞಾನ	Biotechnology ✓	I ರಿಂದ VI
18.	ಪತ್ರಿಕೋದ್ಯಮ	Journalism	I ರಿಂದ VI
19.	ಫ್ಯಾಷನ್ ಆಂಡ್ ಅಪೇರಲ್ ಡಿಸೈನ್	Fashion and Apparel Design	I ರಿಂದ VI
20.	ವಿದ್ಯುನ್ಮಾನ ವಿಜ್ಞಾನ	Electronic Science	I ರಿಂದ IV
21.	ಗಣಕವಿಜ್ಞಾನ	Computer Science	I ರಿಂದ II
22.	ಗ್ರಂಥಾಲಯ ಮತ್ತು ಮಾಹಿತಿ ವಿಜ್ಞಾನ	Library & Information Science	I ರಿಂದ II

ಆದೇಶದ ಮೇರೆಗೆ,


ಕುಲಸಚಿವರು
13/6/20

ಗೆ,

ವಿಶ್ವವಿದ್ಯಾಲಯಕ್ಕೆ ಸಂಯೋಜನೆಗೊಂಡಿರುವ (ವಿಜ್ಞಾನ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ) ಎಲ್ಲಾ ಕಾಲೇಜುಗಳ ಪ್ರಾಂಶುಪಾಲರುಗಳಿಗೆ.

ಪ್ರತಿಗಳು:

1. ವಿಜ್ಞಾನ ನಿಷಾಯದ ಡೀನರು, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು - 560 056.
2. ಸಂಬಂಧಿಸಿದ ವಿಭಾಗಗಳ ಮುಖ್ಯಸ್ಥರುಗಳಿಗೆ, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
3. ಕುಲಸಚಿವರು(ಮೌಲ್ಯಮಾಪನ), ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
4. ನಿರ್ದೇಶಕರು, ಅಂಚೆ ತೆರಪಿನ ಮತ್ತು ದೂರಶಿಕ್ಷಣ ನಿರ್ದೇಶನಾಲಯ, ಬೆಂ.ವಿ.ವಿ. ಬೆಂಗಳೂರು.
5. ನಿರ್ದೇಶಕರು, ಪ್ರಸಾರಾಂಗ, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು - ಮುಂಬರುವ ಗೆಜಟ್‌ನಲ್ಲಿ ಪ್ರಕಟಿಸಲು ಕೋರಿದೆ.
6. ಕುಲಪತಿಯವರ/ಕುಲಸಚಿವರ/ಕುಲಸಚಿವರು(ಮೌ) ಇವರ ಆಪ್ತಕಾರ್ಯದರ್ಶಿಗಳಿಗೆ ಮತ್ತು ವಿಶ್ವಾಧಿಕಾರಿಯವರ ಆಪ್ತ ಸಹಾಯಕರಿಗೆ, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
7. ಸಮನ್ವಯಾಧಿಕಾರಿಗಳು, ಅಂಕಿ ಅಂಶಗಳ ಶಾಖೆ, ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು.
8. ಕಛೇರಿ ಪ್ರತಿ.

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DEPARTMENT OF MICROBIOLOGY
BANGALORE UNIVERSITY

PROCEEDINGS OF THE MEETING OF THE BOS IN MICROBIOLOGY &
BIOTECHNOLOGY (UG) HELD ON 20TH OCTOBER, 2003

Members present

1. Dr. Y.L. Ramachandra, Kuvempu University, Shimoga

2. Dr. N.S. Devaki, Yuvaraja College, Mysore

3. Dr. P.S. Shastry, BHS College, Bangalore

4. Dr. S. Mahesh, NMKRV College, Bangalore

5. Prof. Geetha Bali, Chairman, BOS

The meeting of the BOS (UG) in microbiology and Biotechnology was conducted between 1.00 PM and 7.00 PM in the Department of Microbiology, Bangalore University, Jnana Bharathi on 20th October, 2003. The chairman welcomed the members and presented the draft syllabus for Industrial Microbiology subject for B.Sc. degree jointly prepared by the members of the BOS and further modified based on the discussions held during the earlier meetings of the BOS. The syllabus was scrutinized and it was resolved to approve the same.

PROCEEDINGS OF THE MEETING OF THE BOS IN MICROBIOLOGY &
BIOTECHNOLOGY (UG) HELD ON 20TH JUNE, 2003

Members present

1. Dr. N.S. Devaki, Yuvaraja College, Mysore
2. Dr. P.S. Shastry, BHS College, Bangalore
3. Mr. Denny John, St. Joseph's college, Bangalore
4. Ms. Pushpalatha, SJR College, Bangalore
5. Dr. S. Mahesh, NMKRV College, Bangalore
6. Prof. Krishne Gowda, Govt. Science College, Bangalore
7. Prof. Geetha Bali, Chairman, BOS

Devaki N.S. 20/6/2003

P.S. Shastry 20/6

Pushpalatha 20/6/03

S. Mahesh

Govt. Science College 20/6/03

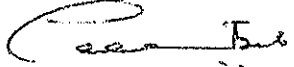
The meeting of the BOS (UG) in microbiology and Biotechnology was conducted between 10.00 AM and 5.00 PM in the department of Microbiology, Bangalore University, Jnana Bharathi on 20th June, 2003. The chairman welcomed the members and presented the draft syllabus for B.Sc. Biotechnology and B.Sc. Microbiology, jointly prepared by the members of the BOS and further modified based on the discussions held during the workshop held on 17th and 18th June, 2002. The members thoroughly scrutinized each of the papers including practicals framed for B.Sc. Microbiology as well as B.Sc. Biotechnology and approved the same after suitable modifications.

The members unanimously approved the syllabi received from the university for introducing Indian constitution and computer fundamentals in undergraduate semester scheme.

With reference to the letter referred to the BOS about Biotechnology regular course, a syllabus has already been prepared for B.Sc. Biotechnology (Regular course) by the BOS and submitted to the University for further needful action. Now a new syllabus has been framed for B.Sc. Biotechnology semester scheme and the same is being submitted. The members unanimously expressed that the new syllabus could be implemented for B.Sc. Biotechnology regular course. The members further felt that there should be uniformity in the B.Sc. course offered in Biotechnology in various colleges.

The meeting concluded with thanks to the chair.

2


CHAIRMAN
Board of Examiners in
Microbiology & Biotechnology
Bangalore University
Bangalore-560 056

Unit 4. Sex Determination in Plants and animals
 Concept of allosomes and autosomes, XX - XY, XX - XO, ZW - ZZ, ZO - ZZ types 2 H

Unit 5. Linkage and Crossing Over
 Coupling and repulsion hypothesis, Linkage in maize and Drosophila, Mechanism of crossing over importance, Chromosome mapping - linkage map in maize. 4 H

Unit 6. Chromosomal Variations
 A general account of structural and numerical aberrations, Chromosomal evolution of wheat and cotton 4 H

Unit 7. Cytoplasmic Inheritance
 Plastid inheritance in Mirabilis, Petite characters in yeast and Kappa particles in Paramecium. 2 H

Unit 8. Mutations
 Types: spontaneous and induced, Mutagens: Physical and chemical, Mutation at the molecular level. Mutations in plants, animals, and microbes for economic benefit of man. 4 H

Unit 9. Human Genetics
 Karyotype in man, Inherited disorders - Allosomal (Klinefelter syndrome and Turner's syndrome) Autosomal (Down syndrome and Cri-Du-Chat syndrome). 2 H

Semester I

BTP 102 - Cell Biology and Genetics

Total Units all

- | | |
|--|---|
| 1. Use of Micrometer and calibration, measurement of onion epidermal cells and yeast | 2 |
| 2. Cell division: Mitotic and meiotic studies in grasshopper testes, onion root tips and flower buds | 4 |
| 3. Chromosomes: Mounting of polytene chromosomes | 1 |
| 4. Buccal smear - Barr bodies | 1 |
| 5. Karyotype analysis - Man and Onion
Man - Normal and Abnormal - Down and Turner's syndromes (with the help of slides) | 2 |
| 6. Simple genetic problems (Problems on Interaction of genes) | 1 |
| 7. Isolation of chloroplasts and mitochondria | 2 |
| 8. Vital staining of mitochondria | 1 |
| 9. Blood smear - differential staining | 1 |

**EACH STUDENT IS REQUIRED TO SUBMIT 5 PERMANENT SLIDES
 (MITOSIS & MEIOSIS - at least two from each)**

REFERENCES:

CELL BIOLOGY

1. Molecular Biology of Cell - Bruce Alberts et al, Garland publications
2. Animal Cytology & Evolution - M.J.D. White Cambridge University Publications
3. Molecular Cell Biology - Daniel, Scientific American Books
4. Cell Biology - Jack D. Bruke, The William Twilkins Company
5. Principles of Gene Manipulations - Old & Primrose, Black Well Scientific Publications
6. Cell Biology - Ambrose & Dorothy M Easiy, ELBS Publications.
7. Fundamentals of Cytology - Sharp, Mc Graw Hill Company
8. Cytology- Willson & Marrison, Reinform Publications
9. Molecular Biology - Smith Faber & Faber Publications
10. Cell Biology & Molecular Biology - EDP Roberties & EMF Roberties, Saunder College
11. Cell Biology - C.B Powar, Himalaya Publications

GENETICS

1. Basic Genetics - Daniel L.Hartl, Jones & Barlett Publishers USA
2. Human Genetics and Medicine - New Studies in Biology by Cynl A Clark Edward Arnold Publishers, London
3. Genetics - Monroe W Strickberger, Macmillain Publishers, NewYork
4. Genes V - Benjamin Lewin, Oxford University Press.
5. Genes I - Benjamin Lewin, Wiley Eastern Ltd., Delhi.
6. Genes II - Benjamin Lewin, Wiley & Sons Publications
7. Genes III - Benjamin Lewin, Wiley and Sons Publications
8. Principles of Genetics - Winchester Sinnott & Dorn
9. Genetics- Blue Print of life by Sandhya Mitra, Tata McGraw Hill Publications
10. Genetics - Edgar Altenburg Oxford & IBH publications
11. Principles of Genetics - E.J.Gardener, M.J.Simmons and D.P.Smustad, John Wiley & Sons Publications

Part A: Microbiology

Total hours allotted: 42

Unit 1. Introduction and Scope of Microbiology

Definition and history of microbiology, contributions of Antony van Leeuwenhoek, Louis Pasteur, Robert Koch, Joseph Lister, and Alexander Fleming.

Importance and Scope of Microbiology as a modern science

Branches of Microbiology.

5 Hour

Unit 2. Microscopy

Construction and working principles of different types of microscopes – Compound, Dark field, Phase contrast, Fluorescence and Electron (Scanning and Transmission)

5 Hour

Unit 3. Microbial Techniques

A). **STERILIZATION:** Principles and applications of

a. Physical Methods: Autoclave, Hot air oven, Laminar airflow, Seitz filter, Sintered glass filter, membrane filter.

b. Chemical Methods: Alcohol, Aldehydes, Phenols, Halogens and Gaseous agents.

c. Radiation Methods: UV rays and Gamma rays.

5 Hour

B). **STAINS AND STAINING TECHNIQUES:** Principles of staining, Types of stains - Simple stains, Structural stains and Differential stains.

2 Hour

Unit 4. Microbial Taxonomy

Concept of microbial species and strains, classification of bacteria based on - morphology (shape flagella), staining reaction, nutrition and extreme environment.

4 Hour

Unit 5. General Account of Viruses and Bacteria

A. **VIRUSES** - Structure and classification

Plant viruses - CaMV

Animal viruses - Hepatitis B

Bacterial virus - Lambda phage

B. **BACTERIA** - Ultrastructure of a bacterial cell (both Gram positive and Gram negative) including endospore and capsule

8 Hour

Unit 6. Eukaryotic microorganisms

Salient features, classification and reproduction of fungi, mycoplasma and algae.

4 Hour

Unit 7. Pathogenic Microorganisms

A. Bacterial diseases of man - Tetanus, Tuberculosis, Pneumonia and Cholera

B. Viral disease: AIDS (HIV).

6 Hour

Unit 8. Microbial Metabolism

A) Respiration: EMP, HMP and ED Pathways, Krebs' cycle, Oxidative Phosphorylation.

B) Bacterial Photosynthesis: Photosynthetic apparatus in Prokaryotes, Photophosphorylation & I reaction.

6 Hour

PART B - BIostatISTICS

Total hours allotted: 15 Hours

Unit 1. Importance and application

Tabulation and Classification of data, Frequency distribution and Graphical distribution of data 2 Hours

Unit 2. Measures of Central tendencies

Mean, Median, Mode and their properties 3 Hours

Unit 3. Measures of Dispersion

Mean deviation, Variance, Standard deviation and Coefficient of Variation. 3 Hours

Unit 4. Hypothesis Testing

Student T and Chi square test 2 Hours

Unit 5. Probability and Distribution

Concepts and problems on probability, Binomial, Poisson, Normal Distribution and their applications 3 Hours

Unit 6. Different models of data presentation with special reference to biological Samples 2 Hours**Semester II****BTP 202 - Microbiology**

Total Units allotted: 15

1. Safety measures in microbiology laboratory
2. Cleaning and sterilization of glass ware 1 Unit
3. Study of instruments: Compound microscope, Autoclave, Hot air oven, pH meter, Laminar airflow and centrifuge. 2 Units
4. Staining Techniques. Simple, Negative staining, Gram staining, Endospore staining and fungal staining. 4 Units
5. Media preparation : Nutrient agar, MRBA and Nutrient broth. 2 Units
6. Isolation of bacteria and fungi from soil, air, and water - dilution and pour plate methods. 2 Units
7. Estimation of microorganisms - Total Count (haemocytometer) 1 Unit
8. Antibiotic sensitivity test - paper disc method 1 Unit
9. Biochemical tests - starch hydrolysis, catalase & gelatin liquefaction. 1 Unit
10. Study of *Rhizobium* from root nodules of legumes. 1 Unit

REFERENCE

MICROBIOLOGY

1. Microbiology - Pelezar, Chan, Krieg Tata McGraw Hill Publications
2. Microbiology - Concepts and application by Paul A. Ketchum, Wiley Publications
3. Fundamentals of Microbiology-Frobisher, Saunders & Toppan Publications
4. Microbiology - Ronald M. Atlas
5. Introductory Biotechnology - R.E. Singh C.B.D. India (1990)
6. Industrial Microbiology-Casida, Wiley Eastern Ltd.
7. Fundamentals of Bacteriology - Saley
8. Frontiers in Microbial technology-P.S. Bisen, CBS Publishers
9. Biotechnology: International Trends of perspectives A.T. Bull, G. Hoff M.D. Lilly Oxford & T Publishers.
10. General Microbiology-C.B. Powar, H.F. Duginawala, Himalayan Publishing House

BIOSTATISTICS

1. Bliss, C.J.K. (1967) Statistics in Biology, Vol. I Mc Graw Hill, New York
2. Campbell R.C. (1974) Statistics for Biologists, Cambridge Univ. Press, Cambridge
3. Daniel (1999) Biostatistics (3rd edition) Panima Publishing Corporation
4. Swardlaw, A.C. (1985) Practical Statistics for Experimental Biologists, John Wiley and Sons, Inc
5. Khan (1999) Fundamentals of Biostatistics Publishing corporation

STER III

BTP 301 - Biochemistry and Biophysics

Total hours allotted: 60 Hours

PART A: BIOCHEMISTRY

Total hours allotted: 38 Hours

MOLECULES

1. Amino acids

Classification and properties

4 Hours

2. Proteins

Classification based on structure and functions, structural organization of proteins (primary, secondary, tertiary and quaternary structures)

10 Hours

3. Enzymes

Function, classification, enzyme kinetics, factors influencing enzyme activity, co-enzymes and co-factors

8 Hours

4. Carbohydrates

Structure, properties and classification, Carbohydrates as a source of energy

5 Hours

5. Lipids

Structure, properties, classification and functions.

4 Hours

6. Vitamins

Water soluble and fat-soluble vitamins. Dietary source.

4 Hours

7. Hormones

Endocrine hormones - structure and importance in brief

3 Hours

PART B : BIOPHYSICS

Total hours allotted: 22 Hours

1. Scope and development of Biophysics.

1 Hour

2. pH and buffer concepts.

2 Hours

3. Chemical bonding - Ionic bond, covalent bond, hydrogen bond and peptide bond. Van der Waals forces, Principles of thermodynamics.

4 Hours

4. Analytical techniques

Principles and applications of Chromatography (Paper, thin-layer, column and GLC) Centrifugation (RPM and G, Ultracentrifugation)

7 Hours

5. Spectroscopic techniques

Visible spectroscopy, X-ray crystallography, NMR, IR, fluorescence & atomic absorption

4 Hours

6. Isotopes

Radioisotopes, their importance in biological studies, measure of radioactivity, GM counters & Scintillation counting.

4 Hours

SEMESTER IV**BTP 461 - Molecular Biology**

Total Hours Allotted: 60 Hours

- Unit 1. Molecular basis of Life - an introduction. Experimental proof of DNA and RNA as genetic material.** 3 Hours
- Unit 2. Nucleic Acids**
Structure and functions of DNA and RNA
Watson and Crick model of DNA and other forms of DNA(A and Z)
Functions of DNA and RNA including ribozymes 7 Hours
- Unit 3. DNA Replication**
Prokaryotic and Eukaryotic - Enzymes and proteins involved in replication, Theta model and Rolling circle model. 6 Hours
- Unit 4. DNA Repair**
Causes and mechanism- photoreactivation, excision repair, mismatch repair, SOS repair. 4 Hours
- Unit 5. Recombination in prokaryotes**
Transformation, Conjugation and Transduction. 5 Hours
- Unit 6. Structure of Prokaryotic and Eukaryotic gene - genetic code, Properties and Wobble hypothesis.** 5 Hours
- Unit 7. Transcription in Prokaryotes and Eukaryotes**
Mechanism, Promoters and RNA polymerase, transcription factors, Post transcriptional modifications of eukaryotic mRNA. 7 Hours
- Unit 8. Translation**
Mechanism of translation in Prokaryotes and Eukaryotes, Post translational modifications of proteins. 8 Hours
- Unit 9. Regulation of Gene expression**
Regulation of Gene expression in Prokaryotes - Operon concept (Lac and Tryp)
Regulation of Gene expression in Eukaryotes. - transcriptional activation, galactose metabolism in yeast 8 Hours
- Unit 10. Gene organization and expression in Mitochondria and chloroplasts.** 3 Hours
- Unit 11. Insertional elements and transposons.**
Transposable elements in Maize and Drosophila. 4 Hours

- | | |
|---|---------|
| 1. Preparation of Buffers- Citrate and Phosphate. | 1 Unit |
| 2. Estimation of reducing sugars- Glucose, Maltose and Lactose by DNS, H. J and Somoji's methods. | 4 Units |
| 3. Estimation of Protein by Biuret method and Lowry's method. | 3 Units |
| 4. Assay of enzyme activity - Amylase. | 2 Units |
| 5. Separation of Sugars by TLC. | 2 Units |
| 6. Estimation of Amino acids. | 2 Units |
| 7. Estimation of inorganic phosphate by Subba row method. | 1 Unit |

REFERENCE

BIOCHEMISTRY

1. Principles of Biochemistry- Albert L. Lehninger CBS Publishers & Distributors.
2. Biochemistry- Lubert Stryer Freeman International Edition.
3. Biochemistry- Keshav Trehan Wiley Eastern Publications
4. Fundamentals of Biochemistry- J.L. Jain S. Chand and company
5. Biochemistry - Prasaranga, Bangalore University
6. Fundamental of Biochemistry - Dr. A. C. Deb
7. Textbook of Organic Chemistry (A Modern approach)- P.L. Soni, Sultan Chand and Sons, Publishers.
8. The Biochemistry of Nucleic acid - Tenth Edition- Roger L.P. Adams, John T. Knowler and David P. Leader, Chapman and Hall Publications.

BIOPHYSICS

1. Narayanan, P (2000) Essentials of Biophysics, New Age Int. Pub. New Delhi
2. Bliss, C.J.K. (1967) Statistics in Biology, Vol. I Mc Graw Hill, New York.
3. Campbell R. C. (1974) Statistics for Biologists, Cambridge Univ. Press, Cambridge
4. Daniel (1999) Biostatistics (3rd edition) Panima Publishing Corporation
5. Swardlaw, A. C. (1985) Practical Statistics for Experimental Biologists, John Wiley and Sons, Inc. NY
6. Khan (1999) Fundamentals of Biostatistics Publishing corporation
7. Roy R.N. (1999) A Text Book of Biophysics New Central Book Agency.

- | | |
|--|---------|
| 1. Preparation of DNA model. | 1 Unit |
| 2. Estimation of DNA by DPA method. | 1 Unit |
| 3. Estimation of RNA by Orcinol method. | 1 Unit |
| 4. Detergent lysis of RBC | 1 Unit |
| 5. Osmotic lysis of RBC. | 1 Unit |
| 6. Extraction and estimation of protein from animal goat liver/muscle source by Salt precipitation & Organic solvent method | 3 Units |
| 7. Extraction and estimation of protein from animal or plant source (Green gram/Pea) by Salt precipitation & Organic solvent method. | 3 Units |
| 8. Protein separation by Polyacrylamide Gel Electrophoresis (PAGE) | 3 Units |
| 9. Charts on - Conjugation, Transformation and Transduction | 1 Unit |

REFERENCE

MOLECULAR BIOLOGY

1. Glick, B.R and Pasternak J.J (1996) Molecular biotechnology, Principles and application of recombinant DNA, Washington D.C. ASM press.
2. Howe, C. (1995) Gene cloning and manipulation, Cambridge University Press, USA
3. Lewin, B., Gene VI New York, Oxford University Press
4. Rigby, P.W.J. (1987) Genetic Engineering Academic Press Inc. Florida, USA
5. Sambrook et al (2000) Molecular cloning Volumes I, II, & III, Cold spring Harbor Laboratory Press, New York, USA
6. Walker J.M and Gingold, E.B. (1983) Molecular Biology & Biotechnology (Indian Edition) Royal Society of Chemistry U.K.
7. Karp, G (2002) Cell & Molecular Biology, 3rd Edition, John Wiley & Sons; INC

BTP 501 - Genetic Engineering and Environmental Biotechnology

Total Hours Allotted: 60 Hours

PART A: Genetic Engineering

Total Hours Allotted: 25 Hours

- | | |
|--|-------------------|
| 1. Introduction to Genetic Engineering | 1 Hour |
| 2. Tools for genetic engineering
NA manipulative enzymes - Restriction enzymes and DNA ligases.
cloning vectors - Plasmids, Bacteriophage and Cosmids. | 1 Hour
3 Hours |
| 3. In vitro construction of recombinant DNA molecules --(pBR 332, pUC 19) Isolation of passenger
vector DNA, creation of r-DNA. | 3 Hours |
| 4. Transformation of r-DNA - Transformation of r-DNA molecules into target host organisms -
calcium chloride mediated, Electroporation and microinjection. | 2 Hours |
| 5. Screening and selection of recombinant host cells - Immunological screening and Colony
identification. | 2 Hours |
| 6. Gene Libraries - Genomic DNA and c DNA cloning techniques. | 2 Hours |
| 7. Expression of cloned DNA in <i>E. coli</i> | 1 Hour |
| 8. Molecular biology techniques
Electrophoretic techniques - Proteins and nucleic acids.
Polymerase chain reaction (PCR)
Site directed mutagenesis (SDM)
Nucleic acid sequencing - Sanger's method
Blotting techniques - Southern, Western and Northern blot | 6 Hours |
| 9. Application of r-DNA technique in human health.
Production of Insulin
Production of recombinant vaccines- Hepatitis - B
Production of human growth hormone. | 4 Hours |

PART B : ENVIRONMENTAL BIOTECHNOLOGY

Total Hours Allotted: 20 Hours

- | | |
|---|---------|
| 1. Renewable and Non-Renewable resources of energy | 1 Hour |
| 2. Conventional fuels and their environmental impact - Firewood, Plant, Animal, Water, Coal and
oil. | 2 Hours |
| 3. Modern fuels and their environmental impact - Methanogenic bacteria, Biogas, Microbial
hydrogen Production, conversion of sugar to alcohol & Gasohol | 3 Hours |
| 4. Bioremediation
remediation of soil & water contaminated with oil spills, heavy metals and detergents. Degradation of
lignin and cellulose using microbes, Phytoremediation. Degradation of pesticides and other toxic | |

chemicals by Micro-organisms - Degradation of aromatic and chlorinated hydrocarbons and petroleum products.

Hours

Unit 5. Treatment of Municipal waste and Industrial effluents. 2 Hours

Unit 6. Biofertilizers

Role of symbiotic and asymbiotic nitrogen fixing bacteria in the enrichment of soil.

Algal and Fungal bio fertilizers (VAM) 3 Hours

Unit 8. Bioleaching

Enrichment of ores by microorganisms (Gold, Copper and Uranium) 2 Hours

Unit 9. Environmental Significance of Genetically modified microbes, plants and animals. 1 Hour

BTP 502 - Genetic Engineering and Environmental Biotechnology

Total Units Allotted: 15

1. Isolation of genomic DNA from bacteria, plant and animal tissue	3 Units
2. Isolation of plasmid DNA (E.coli)	1 Unit
3. Restriction digestion of DNA	2 Units
4. Separation of DNA by Gel Electrophoresis	2 Units
5. SDS-PAGE	2 Units
6. Bacterial Examination of water by MPN Method	2 Units
7. Estimation of BOD (2 Samples)	2 Units
8. VAM staining	1 Unit

REFERENCE

GENETIC ENGINEERING

1. Glick, B.R & Pasternak J.J (1994) *Molecular Biotechnology, Principles and applications of Recombinant DNA*, American Society for Microbiology, Washington D.C.
2. Christopher H. (1995) *Gene cloning and Manipulation*, Cambridge University Press.
3. Nicholl, D.S.T (1994) *An Introduction of Genetic Engineering*, Cambridge University Press.
4. Old, R.W. and Primrose, S.B. (1986) *Principles of gene manipulation, An introduction to genetic engineering (3rd Edition)* Blackwell Scientific Publications
5. Watson, J.D. Hopkins, N.H. Roberts, J.W. Steetz, J.A. and Weiner, A.M (1988). *Molecular Biology of the Gene* the Benjamin/Cummings Publishing Company, Inc.
6. Kucherlapati, R. and Smith G.R Editors (1988) *Genetic recombination*, Washington, D.C American Society for Microbiology.
7. Lewin B. (1994) *Genes VI*, New York, Oxford University Press.

ENVIRONMENTAL BIOTECHNOLOGY

1. *Microbial Biotechnology* (1995) Alexander N. Glazer Hiroshi Nikaide W.H. Freeman and Company
2. *Molecular biotechnology: Principles and Applications of Recombinant DNA-* Bernaral R. Glick and Jack J. Pasternak ASM Press. Washington, D.C. (1994).
3. *Fungal Ecology and Biotechnology* (1993) Rastogi Publications, Meerut

SEMESTER VI

BTP 601 - Plant Biotechnology

Total Hours Allotted: 45 Hours

Unit 1. <i>In-vitro</i> methods in plant tissue culture, Aseptic Techniques, Nutrient media, and use of growth regulators (Auxins, Cytokinis and Gibberellins).	6 Hours
Unit 2. <i>In-vitro</i> fertilization - Ovary and Ovule culture.	2 Hours
Unit 3. Clonal propagation of elite species (Micro propagation).	4 Hours
Unit 4.	
Organ Culture - Anther, Embryo and Endosperm culture and their applications	
Organogenesis and Somatic Embryogenesis - Technique and applications.	10 Hours
Unit 5.	
Protoplast Culture - Isolation, regeneration and viability test, somatic hybridization, methods of protoplast fusion - Chemical and electro fusion, practical application of somatic hybridization and cybridization.	10 Hours
Unit 6. Somaclonal variation and their significance	3 Hours
Unit 7. <i>In-vitro</i> production of secondary metabolites - Techniques and significance	5 Hours
Unit 8. Role of tissue culture in agriculture, horticulture and forestry	4 Hours
Unit 9. Transgenic plants	
Technique of transformation - Agrobacterium mediated and physical methods (Microprojectile and electroporation) Application of transgenic plants.	2 Hours
Unit 10. Edible Vaccines from plants - Banana, Watermelon	4 Hours
Unit 11. Biotechnology and Intellectual property rights	
Patents, trade secrets, copyright, trademark. Choice of Intellectual property (IPR) and plant genetic resources (PGR), GAA and TRIPS	4 Hours

Unit 4. Transfection of animal cell lines, HAT selection, Selectable Markers and Transplantations of Cultural Cells. 3 Hours

Unit 5. Expression of Cloned proteins in animal cell:- Expression vector, over production and down stream processing of the expressed proteins. 2 Hours

Unit 6. Production of vaccines in animal cells. 1 Hour

Unit 7. Production and applications of monoclonal antibodies 1 Hour

Unit 8. Growth factors- promoting proliferation of animal cells EGF, FGF, PDGF, IL-1, IL-2, NGF and Erythropoietin. 3 Hours

Unit 9. Transgenic Animals: Techniques and Applications and Transgenic mice and sheep. 3 Hours

HTP 504 - Immunology and Animal Biotechnology

Total Units Allotted: 15

1. Blood grouping	1 Unit
2. Differential Count of WBC	2 Units
3. Widal Test and VDRL Test	2 Units
4. Dot Elisa	1 Unit
5. ELISA - Demonstration	2 Units
6. Oserloury Double diffusion (ODD)	1 Unit
7. Isolation of liver parenchyma cells	3 Units
8. Rocket Electrophoresis	2 Units
9. Separation of Serum from blood & precipitation of Immunoglobulins.	2 Units

REFERENCE

IMMUNOLOGY

1. William, E. Paul, (1989) Fundamental immunology, 2nd Edition Raven Press, New York.
2. William, R. Clark (1991) The Experimental Foundations of Modern Immunology (4th Edition) John Wiley and Sons, New York.
3. Ivan, M. Roitt (1994) Blackwell Scientific Publications, London.

ANIMAL CELL BIOTECHNOLOGY

1. Ian Freshney (4th Edition)
2. Butler.
3. Elements of Biotechnology-P.K. Gupta (1st Edition-2000) Rastogi Publications

BTP 602 - Plant Biotechnology

Total Units Allotted: 1

- | | |
|---|---------|
| 1. Preparation of plant culture media - MS (1962), Nitsch (1969) and White's medium | 4 Units |
| 2. Production of Callus and suspension culture | 2 Units |
| 3. Plant protoplast Isolation | 2 Units |
| 4. Plant propagation through Tissue culture (shoot tip and Nodal culture) | 4 Units |
| 5. Preparation of Synthetic seeds | 1 Unit |
| 6. Anther Culture | 2 Units |

REFERENCE

PLANT BIOTECHNOLOGY

1. Ravishankar G.A and Venkataraman L.V (1997) Biotechnology Applications of plant Tissue & Cell culture. Oxford & IBH Publishing co., Pvt Ltd.
2. Bhan (1998) Tissue Culture, Mittal Publications, New Delhi
3. Islam A.C (1996) Plant Tissue Culture, Oxford & IBH Publishing Co., Pvt. Ltd.
4. Lydiane Kyte & John Kleyn (1996) Plants from test tubes. An introduction to Micropropagation (3rd Edition) Timber Press, Partland.
5. Kumar H.D (1991) A text book on Biotechnology (2nd Edition). Affiliated East West Press Private Ltd. New Delhi
6. Chrispeel M.J. and Sdava D.E. (1994) Plants, Genes and agriculture. Jones and Barlett Publishers, Boston
7. Reinert J. and Bajaj Y.P.S. (1997) Applied and Fundamental Aspects of Plant Cell, Tissue, and Organ Culture. Narosa Publishing House

SEMESTER VI

BTP 603 - Industrial Biotechnology

Total Hours Allotted: 45 Hours

Unit 1. Introduction to industrial Biotechnology, basic principles of fermentation technology	1 Hour
Unit 2. Screening and Isolation of Microorganisms, maintenance of strains, strain improvement (Mutant Selection, Recombinant DNA methods).	2 Hours
Unit 3. Fermentation Media Natural and Synthetic Media. Sterilization techniques- Heat, Radiation and Filtration methods.	2 Hours
Unit 4. Fermenters Process of Aeration, Agitation, Temperature regulation and Foam control. Types of Fermenters-Typical, Airlift, Tower and Bubble-up Fermenter.	5 Hours
Unit 5. Type of Fermentation Solid State, submerged fermentation and continuous fermentation Immobilized enzyme and cell bioreactors.	3 Hours
Unit 6. Process Development - Shake flask fermentation, Down stream processing (DSP), Disintegration of cells, Separation, Extraction, Concentration and Purification of Products	4 Hours
Unit 7. Production of Microbial products Brief account of the following products obtained by industrial microbiological fermentation Alcohol Alcoholic Beverage - Beer Organic acid - Citric acid Antibiotic - Penicillin Amino acids - Glutamic acid Vitamin - B12 Brief account of Steroid biotransformation.	11 Hours
Unit 8. Enzyme Biotechnology Characteristics of enzymes Industrially produced enzymes - amylases. Industrial uses of enzymes - Detergents, Leather, Beverage, food and Pharmaceutical Bioreactors for enzyme production - Stirred tank, membrane reactors and continuous flow reactors	6 Hours
Unit 9. Fermented Foods Fermented Foods - Yoghurt, Buttermilk, Idli, Dosa, Cheese, Tempeh. Microbial Foods - Single cell proteins (SCP), Single cell oils (SCO).	5 Hours
Unit 10. Plant cell suspension culture for the production of food additives - Saffron and Capsaicin	2 Hours
Unit 11. Technique of mass culture of Algae - <i>Spirulina</i>	1 Hour
Unit 12. Microbial polysaccharides and polyesters; production of xanthan gum and polyhydroxyalkonoides (PHA)	3 Hours

BTP 604 - Industrial Biotechnology

Total Units Allotted

- | | |
|--|--------|
| 1. Algal and fungal culture - Spirulina, Agaricus, Yeast and Aspergillus. | 4 Unit |
| 2. Estimation of citric acid from <u>Aspergillus</u> culture. | 2 Unit |
| 3. Estimation of lactic acid and lactose. | 3 Unit |
| 4. Immobilization of Yeast cells. | 1 Unit |
| 5. Preparation of wine. | 2 Unit |
| 6. Estimation of Alcohol by Specific gravity method. | 1 Unit |
| 7. Immobilisation of Enzymes - (Invertase can be obtained from yeast cells and observed for glu production). | 2 Unit |
| 8. Visit to Research Centres/ Institutions/ Industries. | |

REFERENCE

INDUSTRIAL BIOTECHNOLOGY

1. Sullia S. B & Shantharam S : (1998) General Microbiology, Oxford & IBH Publishing Co. Pvt.
2. Bisen P.S (1994) Frontiers in Microbial Technology, 1st Edition, CBS Publishers.
3. Glazer A.N & Nikaido. H (1995) Microbial Biotechnology, W.H. Freeman & Co.
4. Prescott & Dunn (1987) Industrial Microbiology 4th Edition, CBS Publishers & Distributors.
5. Prescott & Dunn (2002) Industrial Microbiology, Agrobios (India) Publishers.
6. Crueger W. & Crueger A. (2000) A Text of Industrial Microbiology, 2nd Edition, Panima Publi Corp.,
7. Stanbury P.F, Whitaker H, Hall S.J (1997) Principle of Fermentation Technology., Aditya Book Ltd.

9745 - BUP-100 - May 2004



BANGALORE UNIVERSITY

SYLLABUS 2012-13

BCom., Degree Semester Scheme

DEPARTMENT OF COMMERCE

Central College Campus, Bangalore – 560 001

Copy for the Controller

[Signature]
03/5/12

BANGALORE UNIVERSITY

DEPARTMENT OF COMMERCE

REGULATIONS PERTAINING TO B.Com DEGREE SEMESTER SCHEME

I. Objectives :

1. To cater to the manpower needs of companies in Accounting, Taxation, Auditing, Financial analysis and Management.
2. To develop business analysts for companies, capital markets and commodity markets.
3. To prepare students to take up higher education to become business scientists, researchers consultants and teachers, with core competencies.
4. To develop human resources to act as think tank for Business Development related issues.
5. To develop entrepreneurs.
6. To develop business philosophers with a focus on social responsibility and ecological sustainability.
7. To develop IT enabled global middle level managers for solving real life business problems and addressing business development issues with a passion for quality competency and holistic approach.
8. To develop ethical managers with interdisciplinary approach.
9. To prepare students for professions in the field of Accountancy - Chartered Accountancy, Cost and Management accountancy, professions in capital and commodity markets, professions in life and non life insurance and professions in Banks by passing the respective examinations of the respective professional bodies.

II. Eligibility for Admission :

Candidates who have completed Two year Pre - University course of Karnataka State or its equivalent are eligible for admission into this course.

III. DURATION OF THE COURSE:

The course of study is 3 years of Six Semester. A candidate shall complete his/her degree within six (6) academic years from the date of his/her admission to the first semester.

IV. MEDIUM OF INSTRUCTION

The medium of instruction shall be English. However, a candidate will be permitted to write the examination either in English or in Kannada.

V. ATTENDANCE:

- a. For the purpose of calculating attendance, each semester shall be taken as a Unit.
- b. A student shall be considered to have satisfied the requirement of attendance for the semester, if he/she has attended not less than 75% in aggregate of the number of working periods in each of the subjects compulsorily.
- c. A student who fails to complete the course in the manner stated above shall not be permitted to take the University examination.

VI. COURSE MATRIX

See Annexure - 1

VII. TEACHING AND EVALUATION:

M.Com/MBA/MFA/MBS graduates with B.Com, B.B.M & BBS as basic degree from a recognized university are only eligible to teach and to evaluate the subjects including part - B subjects of III and IV semesters (excepting languages, compulsory additional subjects and core Information Technology related subjects) subjects mentioned in this regulation. Languages and additional subjects shall be taught by the graduates as recognized by the respective board of studies.

VIII. SKILL DEVELOPMENT / RECORD MAINTENANCE AND SUBMISSION:

- a. Every college is required to establish a dedicated business lab for the purpose of conducting practical/on line assignments to be written in the record.
- b. In every semester, the student should maintain a Record Book in which a minimum of 5 exercises/programs per subject are to be recorded. This Record has to be submitted to the Faculty for evaluation at least 15 days before the end of each semester.

IX. SCHEME OF EXAMINATION:

There shall be a university examination at the end of each semester. The maximum marks for the university examination in paper shall be 100. For Skill development Record maintenance grades ranging from 'A to D' shall be awarded by the Faculty concerned.

Grades for Skill Development Record maintenance shall be awarded by the teacher who taught the paper and the teacher concerned shall hand over within three days after end of the semester, the grades list to the Head of the Department who in turn shall handover, within the next three days, to the principal. The principal shall display grades on the notice board paper-wise and student-wise one week prior to the commencement of the semester examination. The original copy of the same, duly signed by the principal, shall be sent by the principal to the registrar (Evaluation) before the commencement of the semester examination.

X. APPEARANCE FOR THE EXAMINATION:

- a) A candidate shall apply for all the parts in each examination when he/she appears for the first time. A candidate shall be considered to have appeared for the examination only if he/she has submitted the prescribed application for the examination along with the required fees to the university.
- b) A candidate who has passed any language under Part-I shall be eligible to claim exemption from the study of the language if he/she has studied and passed the language at the corresponding level.
- c) Further, candidates shall also be eligible to claim exemption from studying and passing in those commerce subjects which he/she has studied and passed at the corresponding level, subject to the conditions stipulated by the university.
- d) A candidate who is permitted to seek admission to particular degree course on transfer from any other University shall have to study and pass the subjects which are prescribed by the University. Such candidates shall not however, be eligible for the award of ranks.

XI. MINIMUM FOR A PASS:

Candidates who have obtained at least 35% of marks in each subject shall be eligible for a pass or exemption in that subject.

XII. CLASSIFICATION OF SUCCESSFUL CANDIDATES:

1. The results of the First to Sixth semester degree examination shall be declared and classified separately as follows:
 - a. First Class: Those who obtain 60% and above of the total marks of parts I, II and III.
 - b. Second Class: Those who obtain 50% and above but less than 60% of total marks of parts I, II and III.
 - c. Pass Class: Rest of the successful candidates who secure 35% and above but less than 50% of marks in part I, II and III.
2. Class shall be declared on the basis of the aggregate marks obtained by the candidates in this degree course (excluding languages and non-core subjects) a whole. However, only those candidates who have passes each semester public examination in the first attempt only shall be eligible for award of ranks. The first ten ranks only shall be notified.

XIII. MEDALS AND PRIZES:

No candidates passing an external examination shall be eligible for any scholarship, fellowship, medal, prize or any other award.

XIV. CONDITIONS TO KEEP TERMS:

- a) A candidate is allowed to carry all the previous unleared papers to the subsequent semester/semesters.
- b) Such of those candidates who have failed/remained absent for one or more papers henceforth called as repeaters, shall appear for exam in such paper/s during the three immediate successive examinations.
- c) The candidate shall take the examination as per the syllabus and the scheme of examination in force during the subsequent appearances.

XV. PATTERN OF QUESTION PAPER:

Each theory question paper shall carry 100 marks and the duration of examination is 3 hours. The Question paper shall ordinarily consist of three sections, to develop testing of conceptual skills, understanding skills, comprehension skills, articulation and application of skills. The Question Paper will be as per the following Model:

SECTION-A 1. a,b,c,d,e,f,g,h,i,j,k,l.	(Conceptual questions) Answer any TEN	(10 X 2 = 20 Marks)
SECTION -B: 2,3,4,5,6.	(Analytical questions) Answer any FOUR	(04 X 8 = 32 Marks)
SECTION-C: 7,8,9,10.	(Essay type questions) Answer any THREE	(03 X 16 = 48 Marks)
Total		100 Marks

XVI. PROVISION FOR IMPROVEMENT OF RESULTS:

The candidate shall be permitted to improve the results of the whole examination or of any Semester or a subject within 30 days after the publication of the results. This provision shall be exercised only once during the course and the provision once exercised shall not be revoked. The application for improvement of results shall be submitted to the Registrar (Evaluation) along with the prescribed fee.

XVII. REMOVAL OF DIFFICULTY AT THE COMMENCEMENT OF THESE REGULATIONS:

If any difficulty arises while giving effect to the provision of these Regulations, the Vice Chancellor may in extraordinary circumstances, pass such orders as he may deem fit.

BANGALORE UNIVERSITY
COURSE STRUCTURE 2012 - 13 Scheme
B.Com COURSE MATRIX

Semester No.	Paper No.	Title of the Paper	Lecture Hour Per Week	Total Marks
I	1.1	Language: Kannada/Sanskrit/Urdu/Tamil/ Telugu/Additional English / Marathi/ Hindi	04	100
	1.2	Language: English	04	100
	1.3	Financial Accounting	04	100
	1.4	Market Behavior and Cost Analysis	04	100
	1.5	Organizational Management	04	100
	1.6	Corporate Administration / Methods and Techniques for Business Decisions.	04	100
II	2.1	Language - I	04	100
	2.2	Language - II	04	100
	2.3	Advanced Financial Accounting	04	100
	2.4	Marketing and Services Management	04	100
	2.5	Indian Financial System	04	100
	2.6	Quantitative Analysis for Business Decision-I	04	100
	2.7	Environmental Studies	04	100
III	3.1	Language: Kannada/Sanskrit/Urdu/Tamil/ Telugu/Additional English / Marathi/ Hindi	04	100
	3.2	Language - II: a) English b) Soft Skills for Business	02 02	50 50
	3.3	Corporate Accounting	04	100
	3.4	Financial Management	04	100
	3.5	Banking Law and Operations	04	100
	3.6	Quantitative Analysis for Business Decision-II	04	100
	3.7	Computer Fundamentals	04	100
	UGC			
IV	4.1	Language - I	04	100
	4.2	Language - II: a) English b) Corporate Communication	02 02	50 50
	4.3	Advanced Corporate Accounting	04	100
	4.4	Cost Accounting	04	100
	4.5	e-Business and Accounting	04	100
	4.6	Stock and Commodity Markets	04	100
	4.7	Indian Constitution	04	100
V	5.1	Entrepreneurship Development	04	100
	5.2	International Business	04	100
	5.3	Income Tax - I	04	100
	5.4	Cost Management	04	100
	5.5	Elective - Paper-I	04	100
	5.6	Elective - Paper -II	04	100
VI	6.1	Legal Environment of Business / Business Regulations	04	100
	6.2	Principles of Auditing	04	100
	6.3	Income Tax - II	04	100
	6.4	Management Accounting	04	100
	6.5	Elective - Paper-III	04	100
	6.6	Elective - Paper -IV	04	100

ELECTIVE GROUPS

1. ACCOUNTING & TAXATION GROUP

Semester No.	Paper No.	Title of the Paper	Lecture Hour Per Week	Total Marks
V	5.5	International Financial Reporting Standards	04	100
	5.6	Business Taxation - I	04	100
VI	6.5	Business Taxation - II	04	100
	6.6	Accounting for Business Decisions	04	100

2. FINANCE GROUP

Semester No.	Paper No.	Title of the Paper	Lecture Hour Per Week	Total Marks
V	5.5	Advanced Financial Management	04	100
	5.6	International Finance	04	100
VI	6.5	Corporate Financial Policy	04	100
	6.6	Security Analysis & Portfolio Management	04	100

3. MARKETING GROUP

Semester No.	Paper No.	Title of the Paper	Lecture Hour Per Week	Total Marks
V	5.5	Consumer Behavior	04	100
	5.6	Marketing Research	04	100
VI	6.5	Advertising & Media Management	04	100
	6.6	Retail Management	04	100

4. INFORMATION & TECHNOLOGY GROUP

Semester No.	Paper No.	Title of the Paper	Lecture Hour Per Week	Total Marks
V	5.5	Accounting Information Systems	04	100
	5.6	Enterprise Resource Planning	04	100
VI	6.5	Information Technology And Audit	04	100
	6.6	Banking Technology and Management	04	100

5. HUMAN RESOURCE GROUP

Semester No.	Paper No.	Title of the Paper	Lecture Hour Per Week	Total Marks
V	5.5	Strategic Human Resource Management	04	100
	5.6	Human Resource Development	04	100
VI	6.5	Labor Welfare & Social Security	04	100
	6.6	Industrial Regulations	04	100

6. BANKING & INSURANCE GROUP

Semester No.	Paper No.	Title of the Paper	Lecture Hour Per Week	Total Marks
V	5.5	International Banking & Forex Management	04	100
	5.6	Life & General Insurance	04	100
VI	6.5	Risk Management	04	100
	6.6	Marketing of Insurance Products	04	100

1.3 - FINANCIAL ACCOUNTING

OBJECTIVE

The objective of this course is to acquaint students with the accounting concepts, tools and Techniques influencing business organizations.

Unit 1: INTRODUCTION TO FINANCIAL ACCOUNTING

10 Hours

Introduction - Meaning and Definition - Objectives of Accounting - Functions of Accounting - Users of Accounting Information - Limitations of Accounting - Accounting Principles - Accounting Concepts and Accounting Conventions- problems on accounting equations.

Unit 2: CONVERSION OF SINGLE ENTRY INTO DOUBLE ENTRY SYSTEM

14 Hours

Single entry system- Introduction - Meaning - Features - Merits - Demerits - Types. Conversion into Double Entry system - Need for Conversion - Preparation of Statement of Affairs - Cashbook - Memorandum Trading Account - Total Debtors Account - Total Creditors Account - Bills Receivable Account - Bills Payable Account - Trading and Profit & Loss Account - Balance Sheet.

Unit 3: HIRE PURCHASE SYSTEM

12 Hours

Introduction - Meaning of Hire Purchase and installment purchase system- difference between hire purchase and installment purchase - Important Definitions - Hire Purchase Agreement - Hire Purchase Price - Cash Price - Hire Purchase Charges - Net Hire Purchase Price - Net Cash Price - Calculation of Interest - Calculation of Cash Price - Journal Entries and Ledger Accounts in the books of Hire Purchaser and Hire Vendor (Asset Accrual Method only). Problems on hire purchase including default and complete repossession of goods.

Unit 4: ROYALTY ACCOUNTS

12 Hours

Introduction - Meaning - Technical Terms - Royalty - Landlord - Tenant - Minimum Rent - Short Workings - Recoupment of Short Working under (Fixed Period) restrictive and non-restrictive (Floating Period) Recoupment within the Life of a Lease - Treatment of Strike and Stoppage of work - Accounting Treatment in the books of Lessee and lessor - passing of journal entries and Preparation of necessary Ledger Accounts including minimum rent account.

Unit 5: CONVERSION OF PARTNERSHIP FIRM INTO A LIMITED COMPANY

- 12 Hrs

Introduction - Need for conversion - Meaning of Purchase Consideration - Mode of Discharge of Purchase Consideration - Methods of calculation of Purchase Consideration - Net Payment Method - Net Assets Method - Passing of Journal Entries and Preparation of Ledger Accounts in the books of Vendor - Treatment of certain items - Dissolution Expenses - Unrecorded Assets and Liabilities - Assets and Liabilities not taken over by the Purchasing Company - Contingent liabilities - Non-assumption of trade liabilities - In the books of Company - Passing of Incorporation entries and preparation of balance sheet under vertical format.

SKILL DEVELOPMENT

- List out various accounting concepts and conventions (GAAP)
- Collection & recording of Royalty agreement with regard to any suitable situation.
- Collection and recording of Hire Purchase Agreement.
- Ascertainment of Cash Price and Interest under Hire Purchase System.
- Draft Joint venture agreement with regard to any suitable situation

BOOKS FOR REFERENCE

- 1) Dr. S.N. Maheswari: Financial Accounting
- 2) B. S Raman: Financial Accounting
- 3) S P Jain and K. L. Narang: Financial Accounting- I
- 4) Radhaswamy and R.L. Gupta: Advanced Accounting
- 5) Jawaharlal & Seema Srivastava :Financial Accounting, HPH
- 6) Guruprasad Murthy: Financial Accounting
- 7) Dr. Anil Kumar, Dr. Rajesh Kumar, B.Mariyappa ; Financial Accounting.
- 8) S. Jayapandian: Financial Accounting from Zero.

1.4 MARKET BEHAVIOR AND COST ANALYSIS

Objective: To make the students familiar with concepts of market, market behaviour, and cost concepts for business analysis.

UNIT 1: FIRMS AND DECISIONS

06 HRS

Firm: meaning and goals, profit verses value (wealth) maximization dynamics. Decision making, decisions under market uncertainties, tactical verses strategic decisions and game theory.

UNIT 2: MARKET FORCES

10 HRS

Demand: meaning, law of demand, nature of elasticity of demand, determinants of elasticity of demand, cost of advertisement and derived demand relations, measurement of price elasticity under total outlay method. Demand forecasting- meaning and methods (problems on trend projection by least square method). Supply: Law of supply, determinants of supply.

UNIT 3: COST AND PROFIT PLANNING

Cost: meaning of short run and long run costs, fixed and variable costs, explicit and implicit costs, opportunity cost and incremental cost (concepts only). Total cost, average cost and marginal cost behavior in short run and long run (including problems on break even analysis). Analysis: BEP, BE Chart and calculation of margin of safety, P.V. ratio: profit-volume ratio (including problems on alternative cost and sales values).

UNIT 4: PRICING PRACTICES AND STRATEGIES

10 HRS

Determinants of pricing policy, pricing methods: marginal cost pricing, target rate pricing, product line pricing, administered pricing, competitive bidding, dual pricing, transfer pricing. Price discrimination: requirements, types and dumping strategies. Pricing over product life cycle: skimmed pricing, penetration pricing, product -line pricing and price leadership. Linear Programming: problems on profit maximization and cost minimization in graphic method with two variables only.

UNIT 5: COST OF CAPITAL AND CAPITAL BUDGETING

12 HRS

Meaning and types of capital, specific cost of capital on: debt, preference shares and equity shares and weighted average cost of capital (concepts only). Capital budgeting: meaning and significance, present value of money and its calculation, methods of investment appraisal (simple problems on PB period and NPV methods only).

SKILL DEVELOPMENT:

1. Draft the diagrammatic representation of each aspect of the chapter in a book under different chapters.
2. Select and discuss the case studies that will have impact on business decision making in each chapter.
3. A survey report on the demand forecasting for a product.
4. Student to choose a product and apply price elasticity in real situation.
5. Present a diagram showing business cycles.

References

1. P.L Mehta; *Managerial Economics*, Sultan Chand & Sons, New Delhi.
2. R.L Varshney and K.L Maheshewari; *Managerial Economics*, Sultan Chand & Sons, New Delhi.
3. H.L Ahuja; *Business Economics*, S. Chand & Company Ltd., New Delhi.
4. Venugopal / Monica : *Economics for Business*, I.K. International Publications.
5. Sanchethi & Kapoor; *Business Mathamatics*, Sultan Chand & Sons, New Delhi.
6. K.P.M Sundaram; *Micro Economics*, Sultan Chand & Sons, New Delhi.
7. M.L. Agarwal; *Business Mathamatics*, Sultan Chand & Sons, New Delhi.
8. D.M. Mithani; *Managerial Economics*, Himalaya Publishing House, New Delhi.
9. M.L. Jhingan & J.K. Stephen; *Managerial Economics*, Vrinda Publishihing (P) Ltd. Delhi.
10. Manoj Kumar Mishra ; *Managerial Economics*, Voyu Education of India, New Dehli.
11. Khan and Jain; *Financial Management*, Tata McGraw Hill Education Private Ltd., New Delhi
12. R.K. Sharma and S.K. Gupta; *Financial Management*, Kalyani Publications, Ludiana.
13. Reddy and Appananiah ; *Economics for Business*.
14. Karma Pal : *Managerial Economics*, Excel Books.

1.5 – ORGANISATIONAL MANAGEMENT

OBJECTIVE

To familiarize the students with concepts and principles of Management Process and Human Resource Management.

Unit 1: INTRODUCTION TO MANAGEMENT

12 Hours

Introduction – Meaning – Nature and characteristics of Management – Scope of Management – Management and Administration – Principles of Management – Social responsibility of management and Ethics.

Unit 2: MANAGEMENT PROCESS

14 Hours

Introduction – Management process – Planning – Meaning and Definition – Nature – Objectives – Types of Plans – Importance of Planning. Organization – Nature – Principles – Types of Organization – Purpose of Organization.

Unit 3: HUMAN RESOURCE MANAGEMENT

10 Hours

Introduction – Meaning of HRM – Objectives of HRM – Importance of HRM – Functions and Process of HRM – HR Manager Duties and Responsibilities – Recent trends in HRM.

Unit 4: HUMAN RESOURCE PLANNING, RECRUITMENT & SELECTION

14 Hours

Meaning – Importance of Human Resource Planning – Benefits of Human Resource Planning. Recruitment – Meaning – Methods of Recruitment. Selection – Meaning – Steps in Selection Process – Problems Involved in Placement.

Unit 5: HUMAN RESOURCE DIRECTING, MOTIVATING & CONTROLLING

10 Hours

Directing, meaning & nature of directing, theories of motivation & leadership style, controlling – meaning – Essentials of a sound control system.

SKILL DEVELOPMENT

- Different types of Organization Charts (structure).
- Chart on Staffing.
- Visit any organization & list out the duties and responsibilities of modern HR Manager
- Visit any organization & identify the various methods of performance appraisal.
- Chart on sources of recruitment.
- Draft Control chart for different industry / business groups.

BOOKS FOR REFERENCE

1. Koontz & O'Donnell, Management.
2. Appaniah & Reddy, Essentials of Management.
3. L M Prasad, Principles of management.
4. Rustum & Davar, Principles and practice of Management.
5. Sharma & Shashi K Guptha – Principles of Management
6. Rajkumar : Human Resource Management, I.K. International
7. Dr. K. Aswathappa , Human Resource Management.
8. P Subba Rao , Human Resource Management
9. T Ramaswamy; Principals of Management.
10. J.D Tripathi ; The Power of Managing Time.
11. Rekha & Vibha –Business Management.
12. VSP Rao-Organisational Behaviour

1.6 CORPORATE ADMINISTRATION

OBJECTIVE

To enable the students to get familiarized with the existing Company Law and Secretarial Procedure.

Unit 1: JOINT STOCK COMPANY

18 Hours

Introduction – Meaning and Definition – Features – Kinds of Companies. Companies Act 1956 – objectives & features. Steps in formation of joint stock companies - Promotion stage – meaning & functions of promoter - incorporation stage – meaning & contents of Memorandum of Association & Articles of Association, distinction between Memorandum of Association and Articles of Association Subscription stage – Meaning & contents of prospectus, statement in lieu of prospects, book building.

Unit 2: CAPITAL OF COMPANY

12 Hours

Share Capital – Meaning of Shares – Kinds of Share – Distinction between equity & preference shares. Debentures – Meaning – Features – Types – Merits and Demerits. SEBI guidelines for issue of shares & debentures.

Unit 3: COMPANY ADMINISTRATION

14 Hours

Board of Directors – appointment – powers - duties & responsibilities. Managing Director – appointment – powers – duties & responsibilities. Secretary - Meaning, qualification, appointment, position, rights duties, liabilities & removal.

Unit 4: CORPORATE MEETINGS

10 Hours

Meaning and Definition – Types of Meeting – requisites of a valid meeting - Statutory Meeting – Annual General Meeting – Extraordinary General Meeting – Board Meeting and Resolutions.

Unit 5: GLOBAL COMPANIES

06 Hours

Meaning – types – features – administration.

SKILL DEVELOPMENT

- Drafting of Memorandum of Association, Drafting Articles of Association.
- Drafting Notice of Company Meetings – Annual, Special, Extraordinary and Board meetings.
- Drafting Resolutions of various meetings – different types.
- Chart showing Company's Organization Structure.
- Chart showing different types of Companies.

BOOKS FOR REFERENCE

1. M.C. Shukla & Gulshan: Principles of Company Law.
2. N.D. Kapoor: Company Law and Secretarial Practice.
3. M.C. Bhandari: Guide to Company Law Procedures.
4. S.C. Kuchal: Company Law and Secretarial Practice.
5. S.C. Sharma : Business Law, I.K. International Publishers
6. Dr. P.N. Reddy and H.R. Appanaiah: Essentials of Company Law and Secretarial Practice, Himalaya Publishers.
7. S.N Maheshwari ;Elements of Corporate Law
8. C.L Bansal: Business and Corporate Law

1.6 METHODS AND TECHNIQUES FOR BUSINESS DECISIONS

OBJECTIVE

To provide basic knowledge of mathematics and statistics and their application to commercial situations.

Unit 1: NUMBER SYSTEM

06 Hrs

Introduction - Natural Numbers - Even Numbers - Odd Numbers - Integers - Prime Numbers - Rational & Irrational numbers, Real Numbers, HCF & LCM (Simple problems).

Unit 2: THEORY OF EQUATIONS

10 Hrs

Introduction - Meaning - Types of Equations - Simple Linear and Simultaneous Equations (only two variables), Elimination and Substitution Methods only. Quadratic Equations - Factorization and Formula Methods ($ax^2 + bx + c = 0$ form only). Problems on Commercial Application.

Unit 3: MATRICES AND DETERMINANTS

14 Hrs

Meaning - types - operation on matrices - addition - subtraction - multiplication of two matrices - transpose - determinants - minor of an element - co-factor of an element - inverse - crammers rule in two variables - application oriented problems.

Unit 4: COMMERCIAL ARITHMETIC

18 Hrs

Simple interest, compound interest including half yearly and quarterly calculations, annuities, Percentages, bills discounting, concepts of Ratios, duplicate-triplicate and sub-duplicate of a ratio. Proportions: third, fourth and inverse proportion - problems.

Unit 5: ACCOUNTING RATIO'S AND PROGRESSIONS

12 Hrs

RATIO'S: Ratio's of profit & loss account and balance sheet: GP ratio, net profit ratio, operating ratio, operating profit ratio, debt equity ratio, fixed assets turnover ratio, total assets turnover ratio, current ratio, liquid ratio, acid test ratio, debtors & creditors turnover ratio. PROGRESSIONS: Introduction - Arithmetic Progression - Finding the n^{th} term of AP and Sum to n^{th} term of AP. Insertion of Arithmetic Mean in given terms of AP and representation of AP. Geometric Progression - finding the ' n ' th term and sum to ' n ' the term of GP.

Skill Development:

- Develop an Amortization Table for Loan Amount - EMI Calculation.
- Secondary overhead distribution using Simultaneous Equations.
- Preparation of Bank Statement.
- List of Laws of Indices and Logarithms.

Books for Reference:

- Saha: *Mathematics for Cost Accountants*.
- Dr. Sancheti & Kapoor: *Business Mathematics and Statistics*.
- Zamarudeen: *Business Mathematics*.
- Madappa, mahadi Hassan, M. Iqbal Taiyab - *Business Mathematics*.
- G.R. Veena and Seema : *Business Mathematics and Statistics I.K. Intl Publishers*
- Maheshwari - *Financial Management*.
- R.k. Sharma and shashi K. Gupta - *Financial Management*.
- Saha & Others *Business Mathematics*
- R.S Bhardwaj : *Mathematics for Economics & Business*

2.3 ADVANCED FINANCIAL ACCOUNTING

OBJECTIVE

The objective of this course is to provide a brief idea about the framework of certain allied aspects of accounting treatment.

Unit 1: ACCOUNTING STANDARDS

8 Hrs

Introduction - Meaning - Definition - Need - Significance - An Overview of Indian Accounting Standards - AS-2, AS-3, AS-6, AS-10, AS-14, AS-20 & AS-21 (Theory Only).

Unit 2: INSURANCE CLAIMS

12 Hrs

Introduction - Need - Loss of Stock Policy - Steps for ascertaining Fire insurance claim - Treatment of Salvage - Average Clause - Treatment of Abnormal Items - Computation of Fire insurance claims.

Unit 3: CONSIGNMENT ACCOUNTS

12 Hrs

Introduction - Meaning - Consigner - Consignee - Goods Invoiced at Cost Price - Goods Invoiced at Selling Price - Normal Loss - Abnormal Loss - Valuation of Stock - Stock Reserve - Journal Entries - Ledger Accounts in the books of Consigner and Consignee.

Unit 4: ACCOUNTING FOR JOINT VENTURES

12 Hrs

Introduction - Meaning - Objectives - Distinction between joint venture and consignment - Distinction between joint venture and partnership - maintenance of accounts in the books of co-venturers - maintaining separate books for joint venture - preparation of memorandum joint venture - problems.

Unit 5: BRANCH ACCOUNTS

16 Hrs

Introduction - Meaning - Objectives - Types of Branches - Dependent Branches - Features - Supply of Goods Price at Cost Price - Invoice Price - Branch Account in the books of Head Office (Debtors System Only). Independent Branches - Features - Incorporation of Branch Trial balance in Head Office Books - Adjustment Entries in Ho books only - Purchase of Branch Fixed Asset - Depreciation of Branch Fixed Asset - Share of Head Office Expenses - Goods in Transit - Cash in Transit - Inter branch Transactions

SKILL DEVELOPMENT

- Prepare the list of Indian Accounting Standards
- Preparation of a claim statement with imaginary figures to submit to Insurance Company.
- Collection of transactions relating to any branch and prepare a branch account.
- Collecting the details regarding the fire insurance claim settlement of a particular Case and recording the important points.
- List out the basis of Apportionment of Revenue Items of a departmental undertaking.

BOOKS FOR REFERENCE:

1. Dr. S.N. Maheswari, *Financial Accounting*
2. B. S Raman, *Financial Accounting*
3. S P Jain and K. L. Narang, *Financial Accounting- I*
4. Radhaswamy and R.L. Gupta, *Advanced Accounting*
5. R.L. *Advanced Financial Accounting.*
6. M.C. Shukla and Grewel, *Advanced Accounting.*
7. Arulanandam & Raman; *Advanced Accountancy*
8. A Bannerjee; *Financial Accounting.*

2.4 MARKETING AND SERVICES MANAGEMENT

OBJECTIVE: To familiarize the students with the principles of marketing and focus them towards marketing and management of services

Unit 1: INTRODUCTION TO MARKETING - 12 Hours
Meaning and definition - Goals - Concepts of Marketing - Approaches to Marketing - Functions of Marketing. RECENT TRENDS IN MARKETING - e-business - Tele-marketing - M-Business - Green Marketing - Retailing, Relationship Marketing - Customer Relationship Management.

Unit 2: MARKETING ENVIRONMENT - 12 Hours
Meaning - demographic - economic - natural - technological - political - legal - socio-cultural environment. MARKET SEGMENTATION AND CONSUMER BEHAVIOUR - Meaning & Definition - Bases of Market Segmentation - Consumer Behaviour - Factors influencing Consumer Behaviour.

Unit 3: MARKETING MIX - 16 Hours
Meaning - elements - PRODUCT - product mix, product line, product life cycle - product planning - new product development - branding - packing and packaging. PRICING - factors influencing pricing, methods of pricing (only meaning), and pricing policy - PHYSICAL DISTRIBUTION, meaning, factors affecting channels, types of marketing channels; PROMOTION - meaning and significance of promotion - personal selling and advertising.

Unit 4: INTRODUCTION TO SERVICE MANAGEMENT - 10 Hours
Meaning of services - characteristics of services - classification of services - marketing mix in service industry - growth of service sector. Service processes - Designing the service process - service blueprint - back office & front office processes.

UNIT 5: SERVICE SECTOR MANAGEMENT - 10 Hours
Tourism and Travel Services - concept, nature, significance and marketing. Health Care services - concept, nature, significance and marketing. Educational services - concept, nature, significance and marketing.

SKILL DEVELOPMENT

- Identify the producer of your choice and describe in which stage of the product life cycle it is positioned.
- Suggest strategies for development of a product.
- Study of Consumer Behaviour for a product of your choice.
- Develop an Advertisement copy for a product.
- Prepare a chart for distribution network for different products.

BOOKS FOR REFERENCE

1. Philip Kotler - Marketing Management
2. J.C. Gandhi - Marketing Management
3. Stanton W.J. et al Michael & Walker, Fundamentals of Management.
4. P N Reddy & Appanniah, Essentials of Marketing Management.
5. Sontakki, Marketing Management.
6. Dr. Shajahan. S; Service Marketing (Concept, Practices & Cases); Himalaya Publishing House; Mumbai; First Edition 2001.
7. Cengiz Haksever et al - 'Service Management and Operations'; Pearson Education.
8. Ramesh and Jayanthi Prasad : Marketing Management I.K. International Publishers
9. Usha Devi, Bhargavi, Jyothi-Service Management.
10. K. Karunakaran; Marketing Management.
11. Jayachandran ; Marketing Management.

2.5 INDIAN FINANCIAL SYSTEM

OBJECTIVE

The objective of this course is to familiarize the students with regard to structure, organization and working of financial system in India.

Unit 1: FINANCIAL SYSTEM

12 Hrs

Introduction – Meaning – Classification of Financial System. Financial Markets – Functions and Significance of Primary Market, Secondary Market, Capital Market, & Money Market.

Unit 2: FINANCIAL INSTITUTIONS

12 Hrs

Types of banking and non-banking financial institutions. Constitution, objectives & functions of IDBI, SFCs, SIDCs, LIC, EXIM Bank. Meaning and scope of Mutual Funds.

Unit 3: COMMERCIAL BANKS

8 Hrs

Introduction – Role of Commercial Banks – Functions of Commercial Banks – Primary functions and Secondary Functions – Investment Policy of Commercial Banks. Narasimham committee report on banking sector reforms.

Unit 4: REGULATORY INSTITUTIONS

12

Hrs

Introduction. RBI – Organization – Objectives – Role and Functions. The Securities – Exchange Board of India – Organization and Objectives.

Unit 5: FINANCIAL SERVICES

12

Introduction – Meaning – Features – Importance. Types of Financial Services – factoring, leasing, venture capital, Consumer finance; housing & vehicle.

SKILL DEVELOPMENT

- Draft a chart showing the financial services in the Indian Financial System.
- List the Instruments traded in the Financial Market.
- Draft the application forms for opening a Fixed, Current and Savings Bank A/cs.
- Collection and recording for Foreign Exchange rates of different currencies Vis-à-vis Rupee.
- Specimen of Debit and Credit cards.
- Specimen of Cheque with MICR technology.

BOOKS FOR REFERENCE

1. Meir Kohn: Financial Institutions and Markets, Tata Mcgrah Hill
2. L M Bhole: Financial Institutions and Markets, Tata Mcgrah Hill
3. Vasantha Desai: The Indian Financial System, HPH.
4. M Y Khan: Indian Financial System, TMH
5. D.K. Murthy and Venugopal.: Indian Financial System I.K. International Publishers
6. P N Varshney & D K Mittal: Indian Financial System, Sulthan Chand & Sons
7. E Gardon & K Natarajan: Financial Markets & Services.
8. G. Ramesh Babu; Indian Financial System. HPH
9. S.C. Sharma and Monica : Indian Financial System I.K. International Publishers
10. A Datta ; Indian Financial System, Excel Books

2.6 QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS-I

OBJECTIVE

To provide basic knowledge of mathematics and statistics and their application to commercial situations.

Unit 1: INTRODUCTION TO STATISTICS

05 Hrs

Meaning and Definition – Functions – Scope – Limitations.

Unit 2: TABULATION AND PRESENTATION OF DATA

10 Hrs

Collection of data - census and sample techniques. Classification of data, preparation of frequency distribution and tabulation of data. Importance of graphic and diagrammatic presentation, Types of diagrams – one dimensional, two dimensional, percentage bar diagrams and pie diagrams.

Unit 3: MEASURES OF CENTRAL TENDENCY

20 Hrs

Introduction – Types of averages – Arithmetic Mean (Simple and Weighted), Median, Mode (using direct & step deviation method only & excluding missing frequency problems). Graphical representation of median and mode – ogives, histograms, smoothed frequency curve, frequency polygon.

Unit 4: MEASURE OF DISPERSION AND SKEWNESS

15 hrs

Introduction – Meaning & Definition – Methods of dispersion: Standard Deviation and Coefficient of Variation. Skewness: meaning, uses, and problems on Karl Pearsons' coefficient of skewness.

Unit 5: INDEX NUMBERS

10 Hrs

Meaning & Definition – uses – Classification – Construction of Index Numbers – Methods of constructing Index Numbers – Simple Aggregative Method – Simple Average of Price Relative Method – Weighted index method – Fisher's Ideal method (excluding TRT & FRT) – Consumer Price Index – Problems.

SKILL DEVELOPMENT

- Collect the age statistics of 10 married couples and compute correlation coefficient.
- Collect the age statistics of 10 newly married couples and compute regression equations. Estimate the age of bride when age of bridegroom is given.
- Select 10 items of daily-consumed products and collect base year quantity, base year price and current year price. Calculate cost of living index.
- Collect the turnover of a company for 7 years and predict the sales of 8th year by using method of least square.

BOOKS FOR REFERENCE

1. S P GUPTA: Statistical Methods- Sultan Chand, Delhi
2. Dr. B N GUPTA: Statistics (Sahitya Bhavan), Agra.
3. S.C GUPTA: Business Statistics.
4. N.V.R Naidu : Operation Research I.K. International Publishers
5. ELLAHANCE : Statistical Methods
6. SANCHETHI AND KAPOOR: Business Mathematics
7. Veerachamy: Operation Research I.K. International Publishers
8. Anand Sharma : Statistics For Management, HPH
9. S. Jayashankar Quantitative Techniques for Management.
10. D.P Apte ; Statistical Tools for Managers.

3.2 (part -B) SOFT SKILLS FOR BUSINESS

Objective

To create an awareness of the soft skills required to plan and pursue a career and also to empower them with employability skills.

Unit 1: ATTITUDE AND EMOTIONAL INTELLIGENCE 06 Hours
Importance of Attitude – Meaning of Positive Thinking and Positive Attitude – how to build positive attitude – effects of negative attitude and how to overcome them. Significance of interpersonal relationships in personal and professional life - Tips to enhance interpersonal relationships - Emotional Intelligence.

Unit 2: VISION, GOAL SETTING & TIME MANAGEMENT 06 Hours
Meaning of Vision – doing things for the right purpose – Setting and achieving goals – importance of goal setting – periodicity in goal setting – short, medium, long-term – methods to achieve set goals. General principles of stress management and Time Management.

Unit 3: CREATIVITY 06 Hours
The creative mind – Importance of Creativity – Elements of Creativity – Influence and Flexibility – Factors influencing creativity – Methods of enhancing creativity – techniques of creativity – Brainstorming, attributes listing.

Unit 4: COMMUNICATION SKILLS 08 Hours
Significance – process of communication - – forms of communication - Communication Gap – listening skills – Basics of Managerial Speaking Skills – Body Language – How to develop matter for a speech, Presentation aids and effective use of presentation aids. Preparation of Resume & preparing students for GD & Interview.

Unit 5: Career Planning 04 Hours
Awareness of carrier, Sources of Information, Choosing a carrier and carrier counseling.

PRACTICALS:

- Extempore speeches, Just a Minute.
- Conducting Stress Interviews.
- Creative Exercise, Role play.

BOOKS FOR REFERENCE:

1. Collins: *Public Speaking*
2. Mair : *Art of Public Speaking*
3. V.N. Ahuja.: *The World's Famous Speeches*
4. Daniel Goleman : *Emotional Intelligence*
5. Jyotsna Codety : *Understanding Emotional Intelligence* .
6. Dalip Singh : *Emotional Intelligence at Work* .
7. B.Husluck : *Personality Development – Elizabeth*.
8. M.S. Rao: *Soft Skills – Enhancing Employability I.K. International Publishers*
9. Allen Bease : *Body Language* .
10. Tanushree Pooder : *Fit and Fine Body and Mind*
11. C.G.G Krishnamacharyulu & Lalitha : *Soft Skills of Personality Development;*
12. Dr. partho Pratim Roy : *Business Communications – The Basics*
13. Sajitha Jayaprakash : *Technical Communication*
14. Rajkumar: *Basic of Business Communication*
15. B. Das / I Satpathy: *Business Communication & Personality Development.*

3.3 CORPORATE ACCOUNTING

OBJECTIVE

The objective of this course is to enable the students to have a comprehensive awareness about the provisions of the company's Act and corporate accounts.

Unit 1: ACQUISITION OF BUSINESS OF NON-CORPORATE ENTITIES

Introduction – calculation of purchase consideration – journal entries, ledger accounts and balance sheet in the books of the company under same set of books.

Unit 2: PROFIT PRIOR TO INCORPORATION

Meaning – calculation of sales ratio – time ratio – weighted ratio – treatment of capital and revenue expenditure – ascertainment of pre-incorporation and post-incorporation profits by preparing profit and loss account – balance sheet.

Unit 3: VALUATION OF GOODWILL

10 Hrs

Meaning – Circumstances of Valuation of Goodwill – Factors influencing the value of Goodwill – Methods of Valuation of Goodwill: Average Profit Method, Super Profit Method, Capitalization of average Profit Method, Capitalization of Super Profit Method, and Annuity Method. Problems.

Unit 4: VALUATION OF SHARES

10 Hrs

Meaning – Need for Valuation – Factors Affecting Valuation – Methods of Valuation: Intrinsic Value Method, Yield Method, Earning Capacity Method, Fair Value Method. Rights Issue and Valuation of Rights Issue. Problems.

Unit 5: COMPANY FINAL ACCOUNTS

20 Hrs

Statutory Provisions regarding preparation of Company Final Accounts – Treatment of Special Items – Tax deducted at source – Advance payment of Tax – Provision for Tax – Depreciation – Interest on debentures – Dividends – Rules regarding payment of dividends – Transfer to Reserves – Preparation of Profit and Loss Account and Balance Sheet in vertical form – calculation of managerial remuneration.

SKILL DEVELOPMENT

- Collect and fill the share application form of a limited Company.
- Collect a Prospectus of a company and identify the its salient features.
- List the various functions of Underwriters.
- Collect annual report of a Company and List out its assets and Liabilities.
- Collection of latest final accounts of a company and find out the net Asset value of shares
- List out the conditions to be fulfilled for redemption of Preference shares.

BOOKS FOR REFERENCE

1. Dr. S.N. Maheswari, *Financial Accounting*.
2. S. P. Jain and K. L. Narang – *Corporate Accounting*
3. SP Iyengar, *Advanced Accountancy*.
4. R L Gupta, *Advanced Accountancy*.
5. S. Bhat- *Corporate Accounting*.
6. Arulanandam & Ramian ; *Corporate Accounting –II*
7. Anil Kumar , Mariyappa & Rajesh – *Corporate Accounting*.

3.4 FINANCIAL MANAGEMENT

OBJECTIVE

To enable students to understand the basic concepts of financial management and the role of financial management in decision-making.

Unit 1: FINANCIAL MANAGEMENT

10 Hrs

Introduction – Meaning of Finance – Business Finance – Finance Function – Aims of Finance Function – Organization structure of finance department – Financial Management – Goals of Financial Management – Financial Decisions – Role of a Financial Manager – Financial Planning – Steps in Financial Planning – Principles of a Sound Financial Planning.

Unit 2: TIME VALUE OF MONEY

12 Hrs

Introduction – Meaning & Definition – Need – Future Value (Even Flow – Uneven Flow & Annuity) – Present Value (Even Flow – Uneven Flow & Annuity) – Doubling Period – Concept of Valuation: Valuation of Bonds, Debentures and shares – Simple Problems.

Unit 3: FINANCING DECISION

14 Hrs

Introduction – Meaning of Capital Structure – Factors influencing Capital Structure – Optimum Capital Structure – Computation & Analysis of EBIT, EBT, EPS – Leverages. Simple Problems.

Unit 4: INVESTMENT & DIVIDEND DECISION

18 Hrs

Investment Decision: Introduction – Meaning and Definition of Capital Budgeting – Features – Significance – Process – Techniques: Payback Period, Accounting Rate of Return, Net Present Value, Internal Rate of Return. Simple Problems. Dividend Decision: Introduction – Meaning and Definition – Determinants of Dividend Policy – Types of Dividends.

Unit 5: WORKING CAPITAL MANAGEMENT

06 Hrs

Introduction – Concept of Working Capital – Significance of Adequate Working Capital – Evils of Excess or Inadequate Working Capital – Determinants of Working Capital – Sources of Working Capital.

SKILL DEVELOPMENT

- Draw the organization chart of Finance Function
- Illustrate operating cycle for at least 2 companies of your choice.
- Evaluate the NPV of an investment made in any one of the capital projects with imaginary figures for 5 years.
- Prepare an aging schedule of debtors with imaginary figures.
- Capital structure analysis of companies in different industries

BOOKS FOR REFERENCE

1. S N Maheshwari, *Financial Management*.
2. Khan and Jain, *Financial Management*.
3. Sharma and Sashi Gupta, *Financial Management*.
4. I M Pandey, *Financial Management*.
5. Prasanna Chandra, *Financial Management*.
6. G. Sudarshan Reddy, *Financial Management*.
7. M. Gangadhar Rao & Others, *Financial management*
8. Kulkarni & SathyaPrasad ; *Financial Management*.
9. P.K Simha – *Financial Management*.
10. S. Bhat- *Financial Management*.

3.5 BANKING LAW AND OPERATIONS

OBJECTIVE

To familiarize the students to understand the law and practice of banking.

Unit 1: BANKER AND CUSTOMER RELATIONSHIP

08 Hrs

Introduction – Meaning of Banker – Meaning of Customer – General & Special Relationships.

Unit 2: NEGOTIABLE INSTRUMENTS

12 Hrs

Introduction – Meaning & Definition – Features – Kinds of Negotiable Instruments: Meaning, Definition & Features of Promissory Notes, Bills of Exchange, Cheques – Crossing of cheques – types of crossing – Endorsements: Meaning, Essentials & Kinds of Endorsement.

Unit 3: BANKING OPERATIONS

20 Hrs

Collecting Banker – Meaning – Duties & Responsibilities of Collecting Banker – Holder for Value – Holder in Due Course – Statutory Protection to Collecting Banker

Paying Banker – Meaning – Precautions – Statutory Protection to the Paying Banker – Dishonor of Cheques – Grounds of Dishonor – Consequences of wrongful dishonor of Cheque.

Lending Banker: Principles of Bank Lending – Kinds of lending facilities such as Loans, Cash Credit, Overdraft, Bills Discounting, Letters of Credit – NPA: meaning, circumstances & impact – regulations of priority lending for commercial banks.

Unit 4: CUSTOMERS AND ACCOUNT HOLDERS

14Hrs

Types of Customers and Account Holders – Procedure and Practice in opening and conducting of account of different customers including minors – meaning & operation of Joint Account Holders, Partnership Firms, Joint Stock companies, executors and trustees, clubs and associations and joint Hindu family.

Unit 5: BANKING INNOVATIONS

06 Hrs

New technology in Banking – E-services – Debit and Credit cards. Internet Banking, ATM, Electronic Fund Transfer, MICR, RTGC, DEMAT.

SKILL DEVELOPMENT:

- Collect and fill account opening form of SB A/c or Current A/c
- Collect and fill pay in slip of SB A/c or Current A/c.
- Draw specimen of Demand Draft.
- Draw different types of endorsement of cheques.
- Past specimen of Travellers Cheques / Gift cheques / Credit cheques.
- List customer services offered by atleast 2 banks of your choice.

BOOKS FOR REFERENCE

1. Tannan M.L: *Banking Law and Practice in India.*
2. Sheldon H.P: *Practice and Law of Banking.*
3. Kothari N. M: *Law and Practice of Banking.*
4. Maheshwari. S.N.: *Banking Law and Practice.*
5. Shekar. K.C: *Banking Theory Law and Practice.*
6. Gordon & Natarajan, *Banking Theory Law and Practice*
7. S. P Srivastava ; *Banking Theory & Practice*
8. S. Vipradas & j. K Syan ; *Bank Lending*
9. Gajendra & poddar : *Law and Practice of Banking*
10. Neelam C Gulati : *Principles of Banking Management.*

3.6 QUANTATIVE ANALYSIS FOR BUSINESS DECISIONS-I

Objective: To train the students with statistical techniques for their application in business decisions.

Unit 1: CORRELATION AND REGRESSION ANALYSIS

13 Hrs

Correlation: Meaning - Uses - Types - Karl Pearson's coefficient of correlation - probable error & Spearman's Rank Correlation (using actual mean and Excluding bivariate and Multi correlation). Regression: Meaning, Uses, Regression lines, regression Equations, regression coefficients (using actual mean method only).

Unit 2: TIME SERIES

10 Hrs

Introduction - Meaning - Uses - Components of Time Series - Computation of Trend Values & graphical presentation under the Method of Least Squares (Excluding simultaneous equation method).

Unit 3: INTERPOLATION AND EXTRAPOLATION

12 Hrs

Meaning - Significance - Assumptions. Methods of Interpolation - Binomial expansion (in case of missing values, only two missing values) - Newton's method of advancing differences.

Unit 4: SAMPLING AND SAMPLING DISTRIBUTION

10 Hrs

Meaning, types: purposive sampling, Random sampling, simple sampling, stratified sampling, parameter and statistic. Sampling distribution - standard error (Simple problems on determination of sample size).

Unit 5: THEORY OF PROBABILITY (Simple Problems only)

10 Hrs

BOOKS FOR REFERENCE

1. S P GUPTA: *Statistical Methods*- Sultan Chand, Delhi
2. S C Guptha and V K Kapoor, *Fundamentals of Mathematical Statistics*
3. G C Beri, *Statistics for Management*.
4. Dr. B N GUPTA: *Statistics (Sahitya Bhavan)*, Agra.
5. Veerachamy: *Operation Research I.K. International Publishers*
6. ELLAHANCE : *Statistical Methods*
7. *Quantitative Techniques for Managerial Decisions*, U K Srivastava, G V Shenoy,
8. S C Sharama, *New Age International Publishers*.
9. C.R Reddy , *Quantitative Techniques for Management Decisions*
10. S. Jaishankar: *Quantitative Techniques for Managers*

3.7 COMPUTER FUNDAMENTALS

OBJECTIVES

To provide basic knowledge of Computer and its Usage.

Unit 1: INTRODUCTION TO COMPUTERS

General features of a Computer – Generation of Computers – Personal Computer – Workstation – Mainframe Computer and Super Computers. Computer Applications – Data Processing – Information Processing – Commercial – Office Automation – Industry and Engineering – Healthcare – Education – Graphics and Multimedia.

Unit 2: COMPUTER ORGANIZATION

Central Processing Unit – Computer Memory – Primary Memory – Secondary Memory – Secondary Storage Devices – Magnetic and Optical Media – Input and Output Units – OMR – OCR – MICR – Scanner – Mouse – Modem.

Unit 3: COMPUTER HARDWARE AND SOFTWARE

Machine language and high level language. Application software. Computer program. Operating system. Computer virus, antivirus and Computer security. Elements of MS DOS and Windows OS. Computer arithmetic. Binary, octal and hexadecimal number systems. Algorithm and flowcharts. Illustrations. Elements of database and its applications.

Unit 4: MICROSOFT OFFICE

Word processing and electronic spread sheet. An overview of MS WORD, MS EXCEL and MS POWERPOINT. Elements of BASIC programming. Simple illustrations.

Unit 5: COMPUTER NETWORKS

Types of networks. LAN, Intranet and Internet. Internet applications. World wide web. E-mail, browsing and searching. Search engines. Multimedia applications.

LIST OF PRACTICAL ASSIGNMENTS: (12 Sessions of 2 hours each)

- System use, keyboard, mouse operations. Word pad and paint brush.
- Creating a folder and saving a document – 2 sessions.
- Simple MS. DOS commands – 1 Session
- Windows operating system – icons, menus and submenus, my computer – 2 sessions
- Desktop publishing – preparation of a document using MS.WORD – 2 sessions
- Installation of a software, virus scanning – illustrations – 1 session.
- Spreadsheet calculations using MS.EXCEL – 1 session.
- BASIC programming – illustrations – 1 session.
- Internet use. Surfing, browsing, search engines, E-mail. – 2 sessions.

BOOKS FOR REFERENCE:

- Alexis Leon and Mathews Leon (1999): *Fundamentals of information technology*, Leon Techworld Pub.
- Jain, S.K. (1999): *Information Technology "O" level made simple*, BPB Pub.
- Jain, V.K. (2000): *"O" Level Personal Computer Software*, BPB Pub.
- Rajaraman, V. (1999): *Fundamentals of Computers*, Prentice Hall India.
- Hamacher, *Computer Organisation*, Mc Graw.
- Archanakumar – *Computer Basics with office automation*, I.K. International Publishers.
- Sinha, *Computer Fundamentals*, BPB Pub.
- C.S. V Murthy *Fundamentals of Computers*, HPH
- G.V Anjaneyulu – *Computer Organisations*
- Saha & Saha – *Computer Fundamentals*
- D. Sharma – *Foundations of IT*

4.2(B) CORPORATE COMMUNICATION

OBJECTIVE

To train the students in drafting various correspondence for different functions of Business

Unit 1: PERSONNEL CORRESPONDENCE

06 Hrs

Letters calling candidates for written test, drafting interview letters, offer of appointment, order of appointment, show cause notices, letters of dismissal and discharge.

Unit 2: SECRETARIAL CORRESPONDENCE

06 Hrs

Correspondence with shareholders and debenture holders relating to dividends and interest, transfer and transmission of shares.

Unit 3: INTER-DEPARTMENTAL COMMUNICATION

06 Hrs

Internal memos, office circulars, office orders, Communication with regional/branch offices.

Unit 4: MODERN COMMUNICATION DEVICES

06 Hrs

Internet, teleconferencing, Mobile Phones, Computers, Laptops, Close circuit TVs, Desktop Publishing, Electronic Mail (e-mail), SMS Messages, Audio Conferencing, Video Conferencing, E-Commerce, Fax, Photocopying, Printing, Electronic Storage Devices.

Unit 5: Public Relations

06 Hrs

Meaning, importance and Elements of Public relations; Corporate Brand Building, Image Management, Event Management and Media Management.

BOOKS FOR REFERENCE

1. R.O. Sharma & Krishna Mohan: *Business Communication & Report Writing*, TMH, New Delhi.
2. Raman. S & Swami. R: *Business Communication – A Practical Approach*, Professional Publications, Madras.
3. Ramesh & Pattanashetti: *Effective Business English & Correspondence*.
4. Majumdar: *Commercial Correspondence*.
5. Pink and Thomsan: *English Grammar, Composition and Correspondence*.
6. R.K. Madhukar : *Business Communications*, Vikas.
7. Bhardwaj : *Fundamental of Business Communication*, I.K. International Publishers
8. Kumar: *Business Communication*.
9. Bovee: *Business Communication Today*.
10. Sharma & others – *Business Communications*.
11. Rai Rai : *Business Communication*, HPH, Mumbai
12. Ritwik Haldar ; *AT.B of Business Communication*
13. Sehgal/ Khetarpal- *Business Communication*

4.3 ADVANCED CORPORATE ACCOUNTING

OBJECTIVE

This course enables the students to develop awareness about Corporate Accounting in conformity with the Provision of Companies' Act and latest amendments thereto with adoption of Accounting Standards.

Unit 1: MERGERS AND ACQUISITION OF COMPANIES

16 Hrs

Meaning of Amalgamation and Acquisition - Types of Amalgamation - Amalgamation in the nature of Merger - Amalgamation in the nature of Purchase - Methods of Purchase Consideration - Calculation of Purchase Consideration (AS14) - Accounting for Amalgamation - Pooling of Interest Method and Purchase Method - Entries and Ledger Accounts in the Books of Transferor Company and Entries and Preparation of Balance Sheet in the books of Transferee Company.

Unit 2: INTERNAL RECONSTRUCTION

08 Hrs

Meaning - Objective - Procedure - Form of Reduction - Passing of Journal Entries - Preparation of Balance Sheet after Reconstruction. Simple Problems.

Unit 3: LIQUIDATION OF COMPANIES

14 Hrs

Meaning - Types of Liquidation - Order of Payment - Calculation of Liquidator's Remuneration - Preparation of Liquidator's Final Statement of Account.

Unit 4: HOLDING COMPANY ACCOUNTS

14 Hrs

Introduction - Meaning of Holding Company - Subsidiary Company - Steps - Pre-Acquisition Profits - Post Acquisition Profits - Minority Interest - Cost of Control or Capital Reserve - Unrealized Profit - Mutual Indebtedness - Preparation of Consolidated Balance Sheet (As per AS21).

Unit 5: RECENT DEVELOPMENTS IN ACCOUNTING

Human Resource Accounting - Environmental Accounting - Social Responsibility Accounting - Accounting for Intangible Assets. (Theory only).

SKILL DEVELOPMENT

- Calculation of Purchase consideration with imaginary figures
- List any 5 cases of amalgamation in the nature of merger or acquisition of Joint Stock Companies
- List out legal provisions in respect of internal reconstruction.
- Narrate the steps for preparation of consolidated balance sheet.
- Calculate minority interest and goodwill with imaginary figures.

BOOKS FOR REFERENCE

1. S.N. Maheswari, *Financial Accounting*.
2. RL Gupta, *Advanced Accountancy*.
3. Patil Korlahalli, *Financial Accounting*.
4. Jain and Narang, *Corporate Accounting*.
5. Tulsian, *Advanced Accounting*.
6. Dr. Anil Kumar, Dr. Rajesh Kumar, B. Mariyappa : *Corporate Accounting-II*.
7. Arulanandam & Raman ; *Corporate Accounting-II*
8. K.K Verma - *Corporate Accounting*.

4.4 COST ACCOUNTING

OBJECTIVE

The objective of this subject is to familiarize students with the various concepts and element of cost.

Unit 1: INTRODUCTION TO COST ACCOUNTING

10 Hrs

Introduction – Meaning & Definition of Cost, Costing and Cost Accounting – Objectives of Costing – Comparison between Financial Accounting and Cost Accounting – Designing and Installing a Cost Accounting System – Cost Concepts – Classification of Costs – Cost Unit – Cost Center – Elements of Cost – Preparation of Cost Sheet – Tenders and Quotations.

Unit 2: MATERIAL COST CONTROL

15 Hrs

Meaning – Types: Direct Material, Indirect Material. Material Control – Purchasing Procedure – Store Keeping – Techniques of Inventory Control – Setting of Stock Levels – EOQ – ABC Analysis – VED Analysis – Just In-Time – Perpetual Inventory System – Documents used in Material Accounting – Methods of Pricing Material Issues: FIFO, LIFO, Weighted Average Price Method and Simple Average Price Method – Problems.

Unit 3: LABOUR COST CONTROL

10 Hrs

Meaning – Types: Direct Labour, Indirect Labour – Timekeeping – Time booking – Idle Time – Overtime – Labour Turn Over. Methods of Labour Remuneration: Time Rate System, Piece Rate System, Incentive Systems (Halsey plan, Rowan Plan & Taylor's differential Piece Rate System) – Problems

Unit 4: OVERHEAD COST CONTROL

15 Hrs

Meaning and Definition – Classification of Overheads – Procedure for Accounting and Control of Overheads – Allocation of Overheads – Apportionment of Overheads – Primary Overhead Distribution Summary – Secondary Overhead Distribution Summary – Repeated Distribution Method and Simultaneous Equations Method – Absorption of Factory Overheads – Methods of Absorption – Machine Hour Rate – Problems.

Unit 5: RECONCILIATION OF COST AND FINANCIAL ACCOUNTS

10 Hrs

Need for Reconciliation – Reasons for differences in Profit or Loss shown by Cost Accounts and Profit or Loss shown by Financial Accounts – Preparation of Reconciliation Statement and Memorandum Reconciliation Account.

SKILL DEVELOPMENT

- Classification of costs incurred in the making of a product.
- Identification of elements of cost in services sector.
- Cost estimation for the making of a proposed product.
- Documentation relating to materials handling in a company.
- Collection and Classification of overheads in an organization.
- Developing a case for reconciliation.

BOOKS FOR REFERENCE

1. N.K. Prasad: *Cost Accounting*
2. Nigam & Sharma: *Cost Accounting*
3. Khanna Pandey & Ahuja – *Practical Costing*
4. M.L. Agarwal: *Cost Accounting*
5. Jain & Narang: *Cost Accounting*
6. Palaniappan and Hariharan : *Cost Accounting I.K. International Publishers*
7. S.P. Tyengar: *Cost Accounting*
8. S.N. Maheshwari. *Cost Accounting*
9. M. N. Arora: *Cost Accounting*
10. Dutta: *Cost Accounting*
11. P. K Sinha *Accounting & Costing for Managers.*

4.5 E-BUSINESS AND ACCOUNTING

UNIT 1. e-BUSINESS

10 Hours

Introduction, E-Commerce – definition, History of E-commerce, types of E-Commerce B to B etc. Comparison of traditional commerce and e-commerce. E-Commerce business models – major B to B, B to C model, Consumer-to-Consumer (C2C), Consumer-to-Business (C2B) model, Peer to-Peer (P2P) model – emerging trends. Advantages/Disadvantages of e-commerce, web auctions, virtual communities, portals, e-business revenue models.

UNIT 2. Hardware and Software for E-Business

05 Hours

Web server hardware and software – software for web servers, Website and internet utility programs, Web server hardware, web hosting choices – electronic commerce software – shopping cart.

Unit 3: Getting started with Tally

05 Hours

What is Tally? Using Tally Software: introduction and installation, Required Hardware, Preparation for installation of tally software, installation. Items on Tally screen: Menu options, creating a New Company, Basic Currency information, New Company, Other information, Company features and inventory features.

Unit 4: Configuring Tally

10 Hours

General, Number symbols, accts/inv info menu, voucher entry, invoice/orders entry and printing, security issue. *Working in Tally:* Making Ledger Accounts, writing voucher, voucher entry, making different types of voucher, correcting sundry debtors and sundry creditor's accounts, preparation of Trail Balance, Accounts books, Cash Book, Bank Books, Ledger Accounts, Group Summary, Sales Register and Purchase Register, Journal Register, Statement of Accounts, & Balance Sheet.

Unit 5: Reports in Tally:

10 Hours

Output reports, basic features of displaying reports, printing reports, other printing options, display account bookstand statements, viewing cash/bank books, configure balance sheet, columnar balance sheet, show fortnightly balance sheet, integrate accounts with inventory, display profit and loss account.

REFERENCE BOOKS

1. Kalakota Ravi and A. B. Whinston : *Frontiers of Electronic Commerce*, Addison Wesley
2. Watson R T : *Electronic Commerce – the strategic perspective*. The Dryden press
3. Agarwala K.N and Deeksha Ararwala: *Business on the Net – Whats and Hows of E-Commerce*
4. Agarwala K. N. and Deeksha Ararwala : *Business on the Net – Bridge to the online store front*, Macmillan, New Delhi.
5. Srivatsava: E.R.P, I.K. International Publishers
6. Diwan, Prag and Sunil Sharma, *Electronic Commerce – A manager guide to E-business*, Vanity Books International, Delhi
7. *Tally for Enterprise Solutions* –
8. C.S.V Murthy- *E Commerce*, HPH
9. P. Diwan / S. Sharma – *E – Commerce*

4.6. STOCK AND COMMODITY MARKETS

Objective: To provide students with a conceptual framework of stock markets and commodity markets, functionalities in these markets and their mode of trading.

- 1. AN OVERVIEW OF CAPITAL AND COMMODITIES MARKETS: 10 Hours**
Primary Market, Secondary Market (Stock Market), Depositories, Private placements of shares / Buy back of shares, Issue mechanism. Meaning of commodities and Commodities market, differences between stock market and commodities market.
- 2. STOCK MARKET: 12 Hours**
History, Membership, Organisation, Governing body, Functions of stock Exchange, on line trading, role of SEBI, Recognized Stock Exchanges in India (brief discussion of NSE and BSE). Derivatives on stocks: meaning, types (in brief).
- 3. TRADING IN STOCK MARKET: 14 Hours**
Patterns of Trading & Settlement – Speculations – Types of Speculations – Activities of Brokers – Broker Charges – Settlement Procedure, National Securities Depository Ltd. (NSDL), Central Securities Depository Ltd. (CSDL) (in brief).
- 4. COMMODITIES MARKET: 14 Hours**
History, Membership, objectives, functions of commodities exchange, Organisation and role of a commodity exchange, Governing Body, Types of Transactions to be dealt in commodity Market – physical market, Futures market – Differences between Physical & Future Market, options on commodities exchanges.
- 5. TRADING IN COMMODITY MARKETS: 10 Hours**
Patterns of Trading & Settlement, Efficiency of Commodity Markets – Size of Commodity

SKILL DEVELOPMENT

1. Prepare the list of recognized stock exchanges in India
2. Prepare the process chart of online trading of share and debentures.
3. Prepare the chart showing Governing Body of the Commodities Market.
4. Prepare the list of commodities traded on commodity market.
5. Enlist the role of NSDL and CSDL.

Reference Books:

- a) Gurusamy, *Financial Markets and Institutions*, 3rd edition, Tata McGraw Hill.
- b) Saunders, *Financial Markets and Institutions*, 3rd edition, Tata McGraw Hill.
- c) Khan, *Indian Financial Systems*, 6th edition, Tata McGraw Hill
- d) Bhole, L.M. (2000), *Indian Financial Institutions, Markets and Management*, McGraw Hill, New York.
- e) Srivastava R.M ; *Management of Indian Financial Institutions*
- f) Pallavi Modi : *Equity – The Next Investment Destination*
- g) B. Kulkarni – *Commodity Markets & Derivatives*.

5.1 ENTREPRENEURSHIP DEVELOPMENT

Objective: To enable students to understand the basic concepts of entrepreneurship and preparing a business plan to start a small industry.

Unit 1: ENTREPRENEURSHIP

10 Hrs

Introduction – Meaning & Definition of Entrepreneurship, Entrepreneur & Enterprise – Functions of Entrepreneur – Factors influencing Entrepreneurship – Pros and Cons of being an Entrepreneur – Qualities of an Entrepreneur – Types of Entrepreneur

Unit 2: SMALL SCALE INDUSTRIES

14 Hrs

Definition – Meaning – Product Range – Capital Investment – Ownership Patterns – Meaning and importance of Tiny Industries, Ancillary Industries, Cottage Industries. Role played by SSI in the development of Indian Economy. Problems faced by SSI's and the steps taken to solve the problems – Policies Governing SSI's.

Unit 3: FORMATION OF SMALL SCALE INDUSTRY

16 Hrs

Business opportunity, scanning the environment for opportunities, evaluation of alternatives and selection based on personal competencies. Steps involved in the formation of a small business venture: location, clearances and permits required, formalities, licensing and registration procedure. Assessment of the market for the proposed project – Financial, technical, Market and social feasibility study.

Unit 4: PREPARING THE BUSINESS PLAN (BP)

10 Hrs

Meaning – importance – preparation – BP format: Financial aspects of the BP, Marketing aspects of the BP, Human Resource aspects of the BP, Technical aspects of the BP, Social aspects of the BP. Common pitfalls to be avoided in preparation of a BP.

Unit 5: PROJECT ASSISTANCE

10 Hrs

Financial assistance through SFC's, SIDBI, Commercial Banks, IFCI – Non-financial assistance from DIC, SISI, AWAKE, KVIC – Financial incentives for SSI's and Tax Concessions – Assistance for obtaining Raw Material, Machinery, Land and Building and Technical Assistance – Industrial Estates: Role and Types.

SKILL DEVELOPMENT

- Preparation of a Project report to start a SSI Unit.
- Preparing a letter to the concerned authority-seeking license to the SS Unit, You propose to start.
- Format of a business plan.
- A Report on the survey of SSI units in the region where college is located.
- Chart showing financial assistance available to SSI along with rates of interest.
- Chart showing tax concessions to SSI both direct and indirect.
- Success stories of Entrepreneurs in the region.

BOOKS FOR REFERENCE

1. Mark. J. Dollinger, *Entrepreneurship – Strategies and Resources*, Pearson Edition.
2. Udai Pareek and T.V. Rao, *Developing Entrepreneurship*
3. S.V.S. Sharma, *Developing Entrepreneurship, Issues and Problems*
4. Srivastava, *A Practical Guide to Industrial Entrepreneurs*
5. Anil Kumar: *Small Business and Entrepreneurship* I.K. International Publishers
6. Government of India, *Report of the committee on Development of small and medium entrepreneurs, 1975*
7. Bharusali, *Entrepreneur Development*
8. Vasanth Desai, *Management of Small Scale Industry*
9. Satish Taneja ; *Entrepreneur Development*
10. Vidya Hattangadi ; *Entrepreneurship*
11. Dr. Venkataramanappa ; *Entrepreneurial Development*
12. B. Janakiraman , Rizwana M: *Entrepreneurship Development*
13. N.V.R Naidu : *Entrepreneurship Development, I.K. International Publishers*

5.2 INTERNATIONAL BUSINESS

OBJECTIVE

The objective of this subject is to facilitate the students in understanding of International Business in a multi cultural world.

Unit 1: INTRODUCTION TO INTERNATIONAL BUSINESS 12 Hrs

Meaning and Definition - Nature - Forms of International Business - Approaches to International Business - Theories of International Trade - Mode of entry into international business

Unit 2: GLOBALIZATION 12 Hrs

Meaning and Definition - Features - Stages - Manifestation of Globalization - Essential Conditions for Globalization - Advantages and Disadvantages - India and Globalization.

Unit 3: ROLE OF MNCs IN INTERNATIONAL BUSINESS 12 Hrs

Meaning and Definitions - Distinction between Domestic & Foreign Companies - Types of MNCs - Organizational Structure of MNCs - Role of MNCs in the development of international business - Role of MNCs in the development of Indian business.

Unit 4: INTERNATIONAL MARKETING INTELLIGENCE 12 Hrs

Meaning - International Marketing Information - Source of Information - International Marketing Information System - International Marketing Research - Application of International Marketing Information.

Unit 5: EXIM TRADE 12 Hrs

Export Trade: Procedure, Steps & Documentation, Direction of India's Export Trade - Export Financing.

Import Trade: Procedure, Steps, Documentation. EXIM Policy - EXIM Finance: EXIM Bank, Commercial Banks.

Foreign Exchange Settlements: Mode and Procedure of settlements.

SKILL DEVELOPMENT

- List any three MNC's operating in India along with their products or services offered.
- Prepare a chart showing currencies of different countries
- Tabulate the foreign exchange rate or at least 2 countries for 1 month
- Collect and Paste any 2 documents used in Import and Export trade.

BOOKS FOR REFERENCE

1. Dr. Aswathappa *International Business*, Himalaya Publishing House.
2. Francis Cherunilam; *International Business*, Prentice Hall of India
3. P. Subba Rao - *International Business* - HPH
4. Jyothi - *International Business*.
5. Anagai, Cheema & Others ; *Glimpses of Emerging Trends in Trade and Development*.
6. P.K Sinha & S.Sinha - *International Business Management*.

5.3 INCOME TAX - I

OBJECTIVE

The Objective of this subject is to expose the students to the various provision of Income Tax Act relating to computation of Income of individual assessee.

Unit 1: INTRODUCTION TO INCOME TAX

10 Hrs

Brief History of Indian Income Tax - Legal Frame Work - Types of Taxes - Canons of Taxation - Important Definitions: Assessment, Assessment Year, Previous Year (including Exceptions), Assessee, Person, Income, Casual Income, Gross Total Income, Agricultural Income (including Scheme of Partial Integration) - Scheme of taxation. Meaning and classification of Capital & Revenue. Income tax authorities: Powers & functions of CBDT, CIT & A.O. (Theory only).

Unit 2: EXEMPTED INCOMES

04 Hrs

Introduction - Exempted Incomes U/S 10 - Restricted to Individual Assessee.

Unit 2: RESIDENTIAL STATUS

10 Hrs

Residential Status of an Individual - Determination of Residential Status - Incidence of Tax - Problems.

Unit 4: INCOME FROM SALARY

24 Hrs

Meaning - Definition - Basis of Charge - Advance Salary - Arrears of Salary - Allowances - Perquisites - Provident Fund - Profits in Lieu of Salary - Gratuity - Commutation of Pension - Encashment of Earned leave - Compensation for voluntary retirement - Deductions from Salary U/S 16 - Problems on Income from Salary.

Unit 5: INCOME FROM HOUSE PROPERTY

12 Hrs

Basis of Charge - Deemed Owners - Exempted Incomes from House Property - Composite Rent - Annual Value - Determination of Annual Value - Treatment of Unrealized Rent - Loss due to Vacancy - Deductions from Annual Value - Problems on Income from House Property.

SKILL DEVELOPMENT

- Form No. 49A (PAN) and 49B.
- Filing of Income Tax Returns.
- List of enclosures to be made along with IT returns (with reference to salary & H.P).
- Preparation of Form 16.
- Computation of Income Tax and the Slab Rates.
- Computation of Gratuity.
- Chart on perquisites.
- List of enclosures to be made along with IT returns (with reference to salary and house property incomes)

BOOKS FOR REFERENCE

1. Dr. Vinod K. Singhania: *Direct Taxes - Law and Practice*, Taxmann publication.
2. B.B. Lal: *Direct Taxes*, Konark Publisher (P) Ltd.
3. Bhagwathi Prasad: *Direct Taxes - Law and Practice*, Wishwa Prakashana
4. Dr. Mehrotra and Dr. Goyal: *Direct Taxes - Law and Practice*, Sahitya Bhavan Publication.
5. Dinakar Pagare: *Law and Practice of Income Tax*, Sultan Chand and sons.
6. Gaur & Narang: *Income Tax*.

5.4 COST MANAGEMENT

OBJECTIVE

Use of costing data for decision making and cost control. Emerging modern cost management concepts.

Unit 1: JOB AND CONTRACT COSTING

15 hours

Features, objectives, advantages and disadvantages of job & contract costing. Comparison between job and contract costing – problems.

Unit 2: PROCESS COSTING

16 hours

Features of process costing, application, comparison between job costing and process costing, advantages and disadvantages, process loss – normal loss – abnormal loss, abnormal gain – joint and by-products – problems (excluding inter-process profits and equivalent production).

Unit 3: OPERATING COSTING

12 hours

Introduction, Meaning, Types & methods. Transport Costing: Meaning, classification of costs, collection of costs, ascertainment of absolute passenger kilometers, ton kilometers – problems.

Unit 4: ACTIVITY BASED COSTING

12 hours

Meaning, differences between traditional costing methods and activity based costing. Characteristics of ABC, Cost drives & cost pools. Product costing using ABC system: uses – limitations – steps in implementation of ABC – simple problems.

Unit 5: TARGET COSTING

05 hours

Target Costing: Meaning, nature, methodology, methods of establishment of cost. Just in Time (JIT): features, implementation, and benefits. (Theory only).

SKILL DEVELOPMENT

- Listing of industries located in your area and methods of costing adopted by them
- List out materials used in any two organizations.
- Collection of different formats – material requisition – purchase requisition-bin card-stores ledger
- Preparation of wage sheet / pay roll with imaginary figures.
- Preparation of flexible budget with imaginary figures

BOOKS FOR REFERENCE

- 1) S P Iyengar, *Cost Accounting*.
- 2) Nigam and Sharma, *Advanced Costing*.
- 3) B.S. Raman, *Cost Accounting*.
- 4) M.N. Arora, *Cost Accounting*.
- 5) N. Prasad, *Costing*.
- 6) Palaniappan and Hariharan : *Cost Accounting*, I.K. International Publishers
- 7) Jain & Narang, *Cost Accounting*
- 8) Ravi M. Kishore – *Cost Management*
- 9) Charles T Horngren, George Foster, Srikant M. Data – *Cost Accounting: A Managerial Emphasis*
- 10) Anthony R. N. – *Management Accounting Principles*
- 11) S. Mukherjee & A. P. Roychowdhury – *Advanced Cost and Management Accountancy*
- 12) J. Made Gowda *Cost Accounting*
- 13) K.S Thakur- *Cost Accounting*

6.1 BUSINESS REGULATIONS

Objective: To introduce the students to various topics in law important to business people and to familiarize the students with common problems.

UNIT 1: INTRODUCTION TO BUSINESS LAWS **06 hours**

Introduction, nature of law, meaning and definition of business laws, scope and sources of business laws.

UNIT 2: CONTRACT LAWS **14 hours**

Indian Contract Act, 1872: Definition of Contract, essentials of a valid contract, classification of contracts, remedies for breach of contract.

Indian Sale of Goods Act, 1930: Definition of contract of sale, essentials of contract of sale, conditions and warranties, rights and duties of buyer, rights of an unpaid seller.

UNIT 3: INFORMATION TECHNOLOGY ACT: **10 hours**

Introduction to Cyber Law in India, salient features of IT Act, 2000, importance of Cyber Law, Digital Signature, cyber crimes.

UNIT 4: COMPETITION AND CONSUMER LAWS: **10 hours**

The Competition Act, 2002: Objectives of Competition Act, the features of Competition Act, **CAT**, offences and penalties under the Act, Competition Commission of India.

Consumer Protection Act, 1986: Definition of the terms consumer, consumer dispute, defect, deficiency, unfair trade practices and services. Rights of the consumer under the Act, Consumer Redressal Agencies – District Forum, State Commission, National Commission.

UNIT 5: ECONOMIC AND ENVIRONMENTAL LAWS:

Indian Patent Laws and WTO Patent Rules: Meaning of IPR, invention and non-invention, procedure to get patent, restoration and surrender of lapsed patent, infringement of patent,

FEMA 1999: Objects of FEMA, salient features of FEMA, definition of important terms: authorized person, currency, foreign currency, foreign exchange, foreign security, offences and penalties.

Environment Protection Act, 1986: Objects of the Act, definitions of important terms: environment, environment pollutant, environment pollution, hazardous substance and occupier, types of pollution, rules and powers of central government to protect environment in India.

SKILL DEVELOPMENT

1. Prepare a chart showing sources of business law and Indian Constitution Articles having economic significance.
2. Draft an agreement on behalf of an MNC to purchase raw materials indicating therein terms and conditions and all the essentials of a valid contract.
3. Draft an application to the Chief Information Officer of any government office seeking information about government spendings.
4. Draft digital signature certificate.
5. Draft a complaint to District Consumer Forum on the deficiency of service in a reputed corporate hospital for medical negligence.
6. Collect leading cyber crimes cases and form groups in the class room and conduct group discussion.
7. Draft a constructive and innovative suggestions note on global warming reduction.

BOOK REFERENCE:

1. N.D. Kapoor, *Business Laws*, Sultan chand publications.
2. Bulchandni, *Business Laws*,
3. S.C. Sharma: *Business Law I.K. International Publishers*
4. K. Aswathappa, *Business Laws*, Himalaya Publishing House,
5. *Tulsion Business Law*
6. *S.S Gulshan – Business Law*

6.2 PRINCIPLES AND PRACTICE OF AUDITING

OBJECTIVE:

This subject aims at imparting knowledge about the principles and methods of auditing and their applications.

Unit 1: INTRODUCTION TO AUDITING

12 Hrs

Introduction – Meaning - Definition – Objectives – Differences between Accountancy and Auditing – Types of Audit - Advantages of Auditing – Preparation before commencement of new Audit – Audit Notebook – Audit Working Papers – Audit Program, RECENT TRENDS IN AUDITING: Nature & Significance of Tax Audit – Cost Audit - Management audit.

Unit 2: INTERNAL CONTROL

12 Hrs

Internal Control: meaning and objectives. Internal Check: meaning, objectives and fundamental principles. Internal Check as regards: Wage Payments, Cash Sales, Cash Purchases. Internal Audit: Meaning - Advantages and Disadvantages of Internal Audit – Differences between Internal Check and Internal Audit.

Unit 3: VOUCHING

12 Hrs

Meaning - Definition – Importance – Routine Checking and Vouching – Voucher -Types of Vouchers – Vouching of Receipts: Cash Sales, Receipts from debtors, Proceeds of the sale of Investments. Vouching of Payments: Cash Purchases, Payment to Creditors, Deferred Revenue Expenditure.

Unit 4: VERIFICATION AND VALUATION OF ASSETS AND LIABILITIES

12 Hrs

Meaning and Objectives of verification and valuation – Position of an Auditor as regards the Valuation of Assets – Verification and Valuation of different Items: Assets: Land & Building, Plant & Machinery, Goodwill – Investments - Stock in Trade. Liabilities: Bills Payable - Sundry Creditors – Contingent Liabilities.

Unit 5: AUDIT OF LIMITED COMPANIES AND OTHERS

12 Hrs

Company Auditor – Appointment – Qualification - Powers - Duties and Liabilities – Professional Ethics of an Auditor. Audit of Educational Institutions – Audit of Insurance Companies- Audit of Co-operative societies.

SKILL DEVELOPMENT:

- Collect the information about types of audit conducted in any one Organization
- Visit an audit firm, write about the procedure followed by them in Auditing the books of accounts of a firm.
- Draft an investigation report on behalf of a Public Limited Company
- Record the verification procedure with respect to any one fixed asset.
- Draft an audit program.

BOOKS FOR REFERENCE:

1. TR Sharma, Auditing.
2. BN Tandon, Practical Auditing.
3. MS Ramaswamy, Principles and Practice of Auditing.
4. Dinakar Pagare, Practice of Auditing.
5. Kamal Gupta, Practical Auditing.
6. P N Reddy & Appannaiah, Auditing.
7. R.G Sexena - Principles and Practice of Auditing

6.3 INCOME TAX - II

OBJECTIVE

The Objective of this course is to make the students to understand the competition of Taxable Income and Tax Liability of individuals.

Unit 1: PROFITS AND GAINS FROM BUSINESS AND PROFESSION 16 Hrs
Meaning and Definition of Business; Profession – Vocation – Expenses Expressly Allowed – Allowable Losses – Expenses Expressly Disallowed – Expenses Allowed on Payment Basis – Problems on Business relating to Sole Trader and Problems on Profession relating to Chartered Accountant, Advocate and Medical Practitioner.

Unit 2: CAPITAL GAINS 16 Hrs
Basis of Charge – Capital Assets – Transfer of Capital Assets – Computation of Capital Gains – Exemptions U/S 54, 54B, 54D, 54EC, 54F – Problems on Capital Gains.

Unit 3: INCOME FROM OTHER SOURCES 10 Hrs
Incomes – Taxable under the head Other Sources – Securities – Kinds of Securities – Rules for Grossing Up – Ex-Interest Securities – Cum-Interest Securities – Bond Washing Transactions – Problems on Income from Other Sources.

Unit 4: DEDUCTIONS FROM GROSS TOTAL INCOME 08 Hrs
Deductions u/s: 80 C, 80 CCC, 80 CCD, 80 D, 80 DD, 80 E, 80 G, 80 GG, 80 GGA, 80 QQB, 80 U.

Unit 5: SET-OFF & CARRY FORWARD OF LOSSES AND ASSESSMENT OF INDIVIDUALS 10Hrs
Meaning – Set-off & Carry forward of losses (Theory only).
Computation of Total Income and Tax Liability of an Individual Assessee (Problems – in case of income from salary & house property computed income shall be given).

SKILL DEVELOPMENT

- Chart Capital gains index numbers.
- Table of rates of Tax deducted at source.
- Filing of IT returns of individuals.
- List of Enclosures for IT returns.

BOOKS FOR REFERENCE

1. Dr. Vinod K. Singhania: *Direct Taxes – Law and Practice*, Taxmann publication.
2. B.B. Lal: *Direct Taxes*, Konark Publisher (P) Ltd.
3. Bhagwathi Prasad: *Direct Taxes – Law and Practice*, Wishwa-Prakashana.
4. Dinakar Pagare: *Law and Practice of Income Tax*, Sultan Chand and sons.
5. Gaur & Narang: *Income Tax*.
6. B.B. Lal: *Income Tax, Central Sales Tax Law & Practice*, Konark Publisher (P) Ltd.
7. V.S. Datey: *Indirect Taxes*, Taxmann Publication.
8. Dr. Sanjeev Kumar: *Systematic Approach to Indirect Taxes*, Bharath Law House.

6.4 MANAGEMENT ACCOUNTING

OBJECTIVE

The objective of this subject is to enable the students to understand the analysis and interpretation of financial statements with a view to prepare management reports for decision-making.

UNIT1: MANAGEMENT ACCOUNTING AND ANALYSIS OF FINANCIAL STATEMENTS

8 Hrs

MANAGEMENT ACCOUNTING: Meaning – Definition – Objectives – Nature and Scope-- Role of Management Accountant – Relationship between Financial Accounting and Management Accounting, Relationship between Cost Accounting and Management Accounting.

ANALYSIS OF FINANCIAL STATEMENTS: Types of Analysis – Methods of Financial Analysis – Comparative Statements – Common Size Statements – Trend Analysis – Problems.

UNIT3: RATIO ANALYSIS

15 Hrs

Meaning and Definition of Ratio, Classification of Ratios, Uses & Limitations – Meaning and types of Ratio Analysis – Problems on Ratio Analysis – Preparation of financial statements with the help of Accounting Ratios.

UNIT4: FUND FLOW ANALYSIS

10 Hrs

Meaning and Concept of Fund – Meaning and Definition of Fund Flow Statement – Uses and Limitations of Fund Flow Statement – Procedure of Fund Flow Statement – Statement of changes in Working Capital – Statement of Funds from Operation – Statement of Sources and Application of Funds – Problems.

UNIT5: CASH FLOW ANALYSIS

10 Hrs

Meaning and Definition of Cash Flow Statement – Differences between Cash Flow Statement and Fund Flow Statement – Uses of Cash Flow Statement – Limitations of Cash Flow Statement – Provisions of AS-3 – Procedure of Cash Flow Statement – Concept of Cash and Cash Equivalents - Cash Flow from Operating Activities – Cash Flow from Investing Activities and Cash Flow from Financing Activities – Preparation of Cash Flow Statement according to AS-3 (Indirect Method Only).

UNIT6: MANAGEMENT REPORTING

5 Hrs

Meaning of Management Reporting – Requisites of a Good Reporting System – Principles of Good Reporting System – Kinds of Reports – Drafting of Reports under different Situations.

SKILL DEVELOPMENT

- Collection of financial statements of any one organization for two years and preparing comparative statements
- Collection of financial statements of any two organization for two years and prepare a common Size Statements
- Collect statements of an Organization and Calculate Important Accounting Ratio's
- Draft a report on any crisis in an organization.

BOOKS FOR REFERENCE

1. Dr. S.N. Maheswari , Management Accounting
2. Sexana, Management Accounting
3. Dr. S.N. Goyal and Manmohan, Management Accounting
4. B.S. Raman, Management Accounting
5. Sharma and Gupta, Management Accounting
6. PN Reddy & Appanaiah, Essentials of Management Accounting.
7. J.Made Gowda - Management Accounting
8. Saha & Others - Management Accounting
9. Sudhindra Bhat- Management Accounting

ELECTIVE GROUPS

1. ACCOUNTING & TAXATION GROUP

5.5 ADVANCED ACCOUNTING

Objectives: To acquaint the students and make them familiar with the process and preparation of accounts of different types of organizations.

UNIT 1: ACCOUNTS OF BANKING COMPANIES

Business of banking companies – some important provisions of banking regulation act of 1949 – minimum capital and reserves – restriction on commission – brokerage – discounts – statutory reserves – cash reserves – books of accounts – special features of bank accounting, final accounts – balance sheet and profit and loss account – interest on doubtful debts – rebate on bill discounted – acceptance – endorsement and other obligations – problems as per new provisions.

UNIT 2: ACCOUNTS OF INSURANCE COMPANIES

Meaning of life insurance and general insurance – accounting concepts relating to insurance companies – Preparation of Final accounts of insurance companies – revenue account and balance sheet.

UNIT 3: INFLATION ACCOUNTING

Need – meaning – definition – importance and need – role – objectives – merits and demerits – problems on current purchasing power method (CPP) and current cost accounting method (CCA).

UNIT 4: FARM ACCOUNTING

Meaning – need and purpose – characteristics of farm accounting – nature of transactions – cost and revenue – apportionment of common cost – by product costing – farm accounting – recording of transactions – problems.

UNIT 5: INVESTMENT ACCOUNTING

Meaning – nature of investment – investment ledger – different terms used – cum dividend or interest – ex-dividend or interest – brokerage and expenses – problems

Books for reference:

1. Dr. S.N. Maheswari, *advanced accountancy.*
2. S. P. Jain and K. L. Narang – *advanced accountancy*
3. R L Gupta, *Advanced Accountancy*
4. shukla and Grewal, *Advanced accountancy*
5. B.S.Raman, *advanced accountancy*
6. Jawaharlal, *Management Accounting.*

5.6 BUSINESS TAXATION- I

OBJECTIVE:

(i) To equip students with the application of principles and provisions of Central sales tax, Customs act, Central excise, value added tax, Service tax laws, (ii) To provide an insight into practical aspects and apply the provisions of tax laws to various situations.

Unit 1: CENTRAL SALES TAX / G.S.T (Goods & Services Tax)

10 Hrs

Objects and basic scheme of CST act, Meaning – Dealer – Business – Sale – Goods – declared goods, Turnover – Sale Price – Sales Exempt from Central Sales Tax, inter state and intra state sale, sales in the course of imports and exports, registration under CST act, – Problems on Central Sales Tax.

Unit 2: CUSTOMS ACT

12 Hrs

Meaning – Types of Custom Duties – Valuation for Customs Duty – Tariff Value – Customs Value – Methods of Valuation for Customs – Problems on Custom Duty

Unit 3: CENTRAL EXCISE

14 Hrs

Procedures relating to Levy, Valuation and Collection of Duty, Types of Duty, Nature of Excise Duties – Cenvat Credit – Classification of Excisable Goods – Valuation of Excisable Goods – Important Central Excise Procedures – Problems.

Unit 4: VALUE ADDED TAX

10 Hrs

Basic Concepts of Value Added Tax – Dealer – Registered Dealer – Sales – Turnover – Input VAT – Output VAT – Goods – Capital Goods – Exempted Sales, Zero rated sale – Merits and Demerits of VAT – Features and Methods of VAT – Variants of VAT – Methods of Computation of VAT (Simple Problems)

SKILL DEVELOPMENT:

- Narrate the procedure for calculation of CST, Customs duty, Central excise, VAT, Service tax
- Preparation of challans for payment of duty.
- Preparation of Manufacturers Invoice.
- Preparation of Tax invoice under the VAT act.
- Filing of Registration forms, half yearly returns and challans for payment of tax under service tax act.

BOOKS FOR REFERENCE:

1. V.S.Datey: *Indirect Taxes – Law and Practice.*
2. R.K.Jain: *Customs Law Manual and Customs Tariff of India.*
3. *Taxmann's: Central Excise Manual and Central Excise Tariff.*
4. *Taxmann's: CENVAT Law and Procedure.*
5. TN Manoharan, *Income Tax Law including VAT/Service Tax, Snow White Publications Pvt. LTD.*
6. G. Sekar, *Income Tax, Service Tax and VAT, C. Sitaraman & Co. Pvt. LTD.*
7. *Karnataka Value added tax Act, 2003 published by Karnataka Law Journal Publications Bangalore - 560009*
8. *Santhil & Santhil : Business taxation.*
9. *S.Bhat: Taxation Management*

6.5 BUSINESS TAXATION -II

OBJECTIVE

To enable the students to understand assessment of Firms and Companies in regard to income tax and wealth tax.

Unit 1: SERVICE TAX 12 Hrs

Meaning and Definition – Features of Service Tax – Levy and Collection of Service Tax – Service Tax Administration – Exemptions from Service Tax – Taxable Services – Determination of Service Tax Liability (Simple Problems)

Unit 2: WEALTH TAX 14 Hrs

Basis of Charge – Assessment Year – Valuation Date – Net Wealth – Deemed Assets – Exempted Assets – Problems on Wealth Tax of companies and firms.

Unit 3: ASSESSMENT OF FIRMS 14 Hrs

Meaning of Partnership, Firm and Partners – New Scheme of Taxation of Firms – Assessment of Firms (Section 184) – Computation of Firm's Business Income – Treatment of Interest and Capital, Salary, Commission, Remuneration received by partners and computation of Firms total income.

Unit 4: ASSESSMENT OF COMPANIES 20 Hrs

Introduction – Meaning of Company – Types of Companies – Computation of Depreciation – Computation of Taxable Income of Companies – Minimum Alternative Tax (MAT) – Computation of Tax Liability.

SKILL DEVELOPMENT

- Collect financial statement of a firm and compute the taxable income
- Narrate the procedure for calculation of book profits
- Make the list of deemed assets and exempted assets under wealth tax act
- Illustrate the buying or leasing of an asset.

BOOKS FOR REFERENCE

1. Vinod K Singhania – "Direct Taxes - Law and Practice", Taxmann Publications
2. Dr. HC Mehrotra and Goyal, "Direct Taxes", Sahitya Bhavan Publications
3. Gaur and Narang ; Direct Taxes, Kalyani Publishers
4. Rajiva S. Mishra -Direct & Indirect Tax
5. Santhil & Santhil : Business taxation.
7. S. Bhat – Taxation Management.

6.6 ACCOUNTING FOR BUSINESS DECISIONS AND REPORTING

OBJECTIVE

To enable the students to understand business decisions using the accounting information.

Unit 1: MARGINAL COSTING

12 Hrs

Meaning - Advantages & Disadvantages - Need for Marginal Costing - Meaning and Definition of Marginal Costing - Features - Uses and Limitation of Marginal Costing - Absorption Costing V/s Marginal Costing - Problems

Unit 2: STANDARD COSTING

12 Hrs

Introduction - Meaning & Definition of Standard Cost and Standard Costing - Analysis of Variances - Advantages & Disadvantages of Standard Costing - Problems on Material Variances, Labor Variances and Overhead Variances.

Unit 3: BUDGETARY CONTROL

12 Hrs

Introduction - Meaning & Definition of Budget and Budgetary Control - Objectives of Budgetary Control - Classification of Budgets - Flexibility, Classification - Functional Budgets - Problems on Flexible Budgets and Cash Budgets.

UNIT 4. INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS):

Introduction - Interpretations by International Financial Reporting Interpretation Committee (IFRIC), Significant difference vis-a-vis Indian Accounting Standards, Understanding of US GAAP and Indian Gap, Applications of IFRS and US GAAP and Indian GAAP.

UNIT 5: CORPORATE FINANCIAL REPORTING:

Issues and problems with special reference to published financial statements.

SKILL DEVELOPMENT

- Preparation of Income Statement using Absorption Costing and Marginal Costing Technique
- Illustrate make or buying decisions.
- Illustrate accept or reject decisions.
- Preparation of Flexible Budget with Imaginary Figures
- List any 10 industries where Standard Costing is used.

BOOKS FOR REFERENCE

1. S P Iyengar, *Cost Accounting*.
2. B.S. Raman, *Cost Accounting*.
3. M.N. Arora, *Cost Accounting*.
4. N. Prasad, *Costing*.
5. Palaniappan & Hariharan : *Cost Accounting*
6. Jain & Narang, *Cost Accounting*.
7. Gouri Shankar; *Practical Costing*.
8. K.S. Thakur: *Cost Accounting*.

BOOKS

1. S N
2. Kha
3. Sha
4. I M H
5. Prasa
6. PV K
7. R.M.
8. Nare
9. Sudh

2. FINANCE GROUP

5.5 ADVANCED FINANCIAL MANAGEMENT

OBJECTIVE

To familiarize the students with Advance Financial Management decisions.

Unit 1: INVESTMENT DECISIONS AND RISK ANALYSIS

12 Hrs

Risk Analysis – Types of Risks – Risk and Uncertainty – Techniques of Measuring Risks – Risk adjusted Discount Rate Approach – Certainty Equivalent Approach – Sensitivity Analysis – Probability Approach – Standard Deviation and Co-efficient of Variation – Decision Tree Analysis – Problems.

Unit 2: SOURCES OF CAPITAL

12 Hrs

Long Term Sources – Meaning – Equity Shares – Preference Shares – Debentures – Differences between Shares & Debentures – Retained Earnings – Long Term Loans and Loans from Financial Institutions.

Unit 3: CAPITAL STRUCTURE THEORIES

12 Hrs

Introduction – Capital Structure – Capital Structure Theories – Net Income Approach – Net Operating Income Approach – Traditional Approach – MM Approach – Problems.

Unit 4: DIVIDEND THEORIES

10 Hrs

Introduction – Irrelevance Theory – MM Model. Relevance Theories – Walter Model – Gordon Model – Problems on Dividend Theories.

Unit 5: PLANNING AND FORECASTING OF WORKING CAPITAL

14 Hrs

Concept of Working Capital – Determinants of Working Capital – Estimating Working Capital Needs – Operating Cycle – Cash Management – Motives of Holding Cash – Cash Management Techniques – Preparation of Cash Budget – Receivables Management – Preparation of Ageing Schedule and Debtors Turnover Ratio – Inventory Management Techniques – Problems on EOQ.

SKILL DEVELOPMENT

- Preparation of a small project report of a small business concern covering all components- (Finance, Marketing, Production, Human Resources, General administration) (Any one component can be selected as a title of the report)
- Designing a capital structure for a Trading concern
- Preparing a blue print on working capital of a small concern.
- Prepare a chart on Modes of cash budget.
- List out different modes of Dividend Policy.
- List out the Companies, which have declared dividends recently along with the rate of dividend.

BOOKS FOR REFERENCE

1. S N Maheshwari, *Financial Management Principles and Practice.*
2. Khan and Jain, *Financial Management.*
3. Sharma and Sashi Gupta, *Financial Management.*
4. I M Pandey, *Financial Management.*
5. Prasanna Chandra, *Financial Management.*
6. PV Kulkarni & BG Sathya Prasad, *Financial Management.*
7. R.M Srivastava ; *Financial Management & Policy*
8. Narendra Singh *Advanced Financial Management*
9. Sudhindra Bhat ; *Financial Management*

5.6 INTERNATIONAL FINANCE

Objectives:

To familiarize the students with International Financial Management issues.

UNIT – 1: INTRODUCTION TO INTERNATIONAL FINANCE 10 Hrs

Issues Involved in International Business and Finance, methods of payment, International Monetary system.

UNIT – 2: FOREIGN EXCHANGE AND BALANCE OF PAYMENTS 15 Hrs

Forex Market & Its Intermediaries, ADR, Foreign Exchange Rate, Theories of Foreign Exchange Rate Determination.

Components of balance of payments – Disequilibrium in the balance of payments-methods of correction of disequilibrium.

UNIT – 3: INSTRUMENTS IN INTERNATIONAL FINANCIAL MARKETS. 08 Hrs

Meaning-definition-international finance markets-Globalisation of Capital markets, Innovation in foreign securities and international portfolio management.

UNIT – 4: FOREIGN EXCHANGE RISK 12 Hrs

Exchange risks – hedging, Forward, future, swaps options, Valuation of future and swaps- valuation of options and efficiency of the exchange market.

UNIT – 5: INTERNATIONAL FINANCIAL INSTITUTIONS AND LIQUIDITY 15 Hrs

The IMF, International liquidity and SDR's (special drawing rights) – International bank for reconstruction and development (World Bank), International development association, International investment guarantee agency.

SKILL DEVELOPMENT:

- Visit any authorized dealers establishment and understand the activities of dealing room
- Analyse the trend of FDI into India during the preceding five years.

BOOKS FOR REFERENCE:

1. Harris Manville, *International Finance*.
2. Keith Pibean, *International Finance*.
3. Timothy Carl Kesta, *Case and Problems in International Finance*.
4. Avadhani B.K, *International Finance Theory and Practice*.
5. P.A. Apte, *International Financial Management*.
6. Somenath : *International Financial Management I.K. Intl*
7. Madhu Vij, *International Finance*.
8. Levi, *International Marketing Management*.
9. Bindar D.C, *International Finance*.
10. Murthy E.N, *International Finance & Risk Management*.
11. M.L. Verma, *Foreign Trade & Management in India*.
12. Rao and Chary, *International Finance*.
13. Ramachandra & Others ; *International Finance*
14. R.M. Srivastava , *Multinational Financial Management*.

6.5 CORPORATE FINANCIAL POLICY

OBJECTIVE

To expose the student towards corporate financial policies.

Unit 1: FINANCIAL POLICY

15 Hrs

Meaning - Scope - Interface of Corporate Financial Policy and other Managerial Functions - Decision in Corporate Financing Policy - Debt Financing - Internal Financing - Factors to be considered in formulating Financing Policy - Problems on EPS and Point of Indifference.

Unit 2: COST OF CAPITAL

10 Hrs

Meaning and Definition - Significance of Cost of Capital - Types of Capital - Computation of Cost of Capital - Specific Cost - Cost of Debt - Cost of Preference Share Capital - Cost of Equity Share Capital - Weighted Average Cost of Capital - Problems.

Unit 3: CORPORATE FINANCIAL GOALS

13 Hrs

Mission - Vision - Profit Maximization - Wealth Maximization - Economic & Business Environment - Sustained Growth Approach - Fund availability - Maximizing Growth - Growth Potential of a Single Product Company - Growth Potential of Multi Product Company.

Unit 4: MERGERS AND ACQUISITIONS

12 Hrs

Meaning - Reasons - Types of Combinations - Forms of Merger - Motives and Benefits of Merger - Financial Evaluation of a Merger - Merger Negotiations - Meaning and Significance of P/E Ratio, Problems on Exchange Ratio and Impact of Merger, EPS and Market Price.

Unit 5: CORPORATE VALUATION

10 Hrs

Meaning of Corporate Valuation - Methods of Corporate Valuation - Reasons for Corporate Valuation - Different approaches for Corporate Valuation - Valuation of Bonds and Intangible Assets - Valuation of Bonds and Shares - Problems.

SKILL DEVELOPMENT

- Formulation of financing policy
- Case analysis of some live merger reported in business magazines
- Analyzing business growth of some companies on the basis of reported financial results of some companies.
- Identify Mission, vision statement of Company.
- Case study of growth pattern of a single product / multi product.

BOOKS FOR REFERENCE

1. I M Pandey, *Financial management.*
2. R P Rustagi, *Financial management.*
3. C Varhorne, *Financial management.*
4. S.C. Sharam and Monika ; *Indian Financial System I.K. Intl*
5. Dr. Besant Ray, *Corporate management.*
6. Weston and Brigham, *Essentials of Managerial Finance.*
7. P N Varshney & D K Mittal; *Indian Financial System, Sulthan Chand & Sons*
8. E Gardon & K Natarajan; *Financial Markets & Services*
9. Nishikanta Jha ; *Mergers Acquisitions and Corporate Restructurings*
10. Sudhindra Bhat ; *Corporate Finance.*

6.6 SECURITY ANALYSIS & PORTFOLIO MANAGEMENT

OBJECTIVE

To familiarize the students about investment decisions and portfolio decisions.

Unit 1: INTRODUCTION TO INVESTMENT MANAGEMENT **12 Hrs**

Meaning of Investment – Selection of Investment – Classification of Securities – Risk and Uncertainty – Types of Risks – Risk and Expected Return – Measurement of Portfolio Risk – Benefits of Diversification – Investment Strategies – Types of Companies and Stocks – Matrix approach in Investment Decision – Investment Avenues

Unit 2: SECURITY ANALYSIS **14 Hrs**

Introduction – Fundamental Analysis – Economic Analysis – Industry Analysis – Company Analysis. Technical Analysis – Dow Theory – Advanced Declined Theory – Chartism Assumptions of Technical Analysis.

Unit 3: MODERN PORTFOLIO THEORY **12 Hrs**

Introduction – Mean – Variance Model – Capital Market Line – Market Portfolio – Capital Asset Pricing Model – Security Market Line – Beta Factor – Alpha and Beta Coefficient – Arbitrage Pricing Model.

Unit 4: PORTFOLIO MANAGEMENT **10 Hrs**

Markowitz Model – Sharpe Model – Jensen and Treynor Model

Unit 5: GLOBAL MARKETS **12 Hrs**

Global Investment Benefits - Introduction to ADRs, GDRs, FCCBs, Foreign Bonds, Global Mutual Funds – Relationship between Trends in Global Markets and the Domestic Markets

BOOKS FOR REFERENCE

1. Kevin, *Investment and Portfolio Management*
2. Prasanna Chandra, *Investment Analysis and Portfolio Management, Mcgraw-Hill*
3. Fischer and Jordan, *Security Analysis and Portfolio Management, Prentice Hall*
4. Avadhani, *Investment Analysis and Portfolio Management, HPH'*
5. A.P. Dash : *Security Analysis and Portfolio Management I.K. Intl*
6. Punithvathy Pandian – *Security analysis & portfolio Mgt*
7. Preeti Singh - *Security Analysis and Portfolio Management*
8. Sudhindra Bhat- *Security Analysis and Portfolio Management*
9. Rohini Singh - *Security Analysis and Portfolio Management*

3. MARKETING GROUP

5.5 CONSUMER BEHAVIOUR

Unit 1: INTRODUCTION

8 hrs

Introduction to Consumer Behaviour - A managerial & consumer perspective; why study consumer behaviour? ; Applications of consumer behaviour knowledge; current trends in Consumer Behaviour; Market segmentation & consumer behaviour.

Unit 2: INDIVIDUAL DETERMINANTS OF CONSUMER BEHAVIOUR

14 hrs

Consumer needs & motivation; personality and self-concept; consumer perception; learning & memory; nature of consumer attitudes; consumer attitude formation and change.

Unit 3: ENVIRONMENTAL DETERMINANTS OF CONSUMER BEHAVIOUR

12 hrs

Family influences; the influence of culture; subculture & cross cultural influences; group dynamics and consumer reference groups; social class & consumer behaviour.

Unit 4: CONSUMER'S DECISION MAKING PROCESS

8 hrs

Problem recognition; Search & Evaluation; Purchase processes; Post-purchase behaviour; personal influence & opinion leadership process; diffusion of innovations; Models of Consumer Behaviour; Researching Consumer behaviour; consumer research process.

Unit 5: CONSUMER SATISFACTION & CONSUMERISM

8 hrs

Concept of Consumer Satisfaction; Working towards enhancing consumer satisfaction; sources of consumer dissatisfaction; dealing with consumer complaint. Concept of consumerism; consumerism in India; the Indian consumer; Reasons for growth of consumerism in India; Consumer protection Act 1986.

SKILL DEVELOPMENT:

- Conduct an informal interview of a local retail store owner and determine what demographic and socio economic segments the store appears to satisfy. How did the owner select this segment or segments?
- Conduct formal interview to the managers of three retail-clothing stores. Determine the degree to which they believe consumer's personality and self-image are important to the marketing activities of the stores.
- Visit three local restaurants and assess how each attracts clientele in different stages of the family life cycle.
- You are the owner of two furniture stores, one catering to upper-middle class consumers and the other to lower-middle class consumers. How do social class differences influence each store's
 - Product lines & styles
 - Advertising media selection
 - The copy & communication styles used in the advertisements
 - Payment policies
- For each of the following Products & services, indicate who you would go to for information and advice;
 - The latest fashion in clothes
 - Banking
 - Air travel
 - Vacation destinations
 - A personal computer
- For each situation; indicate the person's relationship to you and your reasons for selecting him/her as the source of information and advice.

REFERENCE BOOKS:

- 1) Leon. G. Schiffman & Leslie Lazer Kanuk; *Consumer behaviour*, 6th Edition; PHI, New Delhi, 2000.
- 2) David. L. Loudon & Albert J. Bitta; *Consumer Behaviour*; 4th Edition, Mcgraw Hill, Inc; New Delhi, 1993.
- 3) Assael Henry; *Consumer behaviour and marketing action*; Asian Books(P) Ltd, Thomson learning, 6th Edition; 2001.
- 4) Suja R.Nair, *Consumer behaviour in Indian perspective*, First Edition, Himalaya Publishing House, Mumbai, 2003.
- 5) Jay D. Lindquist & M. Joseph Sirgy, *Shopper, Buyer and Consumer Behaviour*, 2003.
- 6) Blackwell; *Consumer Behaviour*, 2nd Edition.
- 7) Sontakki; *Consumer Behaviour*.
- 8) Schiffman; *Consumer Behaviour*.
- 9) Rajeev Khurra; *Consumer Behaviour*.
- 10) S H H Kazmi; *Consumer Behaviour & Marketing Communication*.

5.1 MARKETING RESEARCH

OBJECTIVE

To enable the students to understand the basic concepts of Marketing Research, Analysis and Presentation of Report.

Unit 1: INTRODUCTION & BASIC CONCEPTS

Introduction to marketing research - nature, characteristics, scope, uses & limitations; Interaction between management and marketing research; Marketing information system and decision support system in marketing research; Assessing information needs; scientific method & research process; steps in research process; types of research.

Unit 2: SOURCE & COLLECTION OF DATA

Sources of Secondary data; its advantages and disadvantages; methods of collection of primary data; construction of questionnaire and interview, schedule; scaling and measurement; Sampling designs and sample size- decisions; organizing data collection & field force.

Unit 3: PROCESSING & ANALYSIS OF DATA

Editing, Coding & tabulation of data; techniques of data analysis; testing of hypothesis; tests of significance; analysis of associations; analysis of experiments; Interpretation of data.

Unit 4: REPORT WRITING & PRESENTATION

Role & types of report; content of report; principles of report preparation; Presentation & Communication.

Unit 5: TRADITIONAL & EMERGING APPLICATIONS OF MARKETING RESEARCH

Product research; price research; distribution research; advertising research; market & sales research; customer database and relationship marketing; Internet Marketing Research.

SKILL DEVELOPMENT:

- Identify & describe the activities of five marketing research companies in India?
- Form class Teams & based on the sources of secondary data available, prepare a short report on 'Investment options for consumers in Indian financial services sector.'
- Construct a questionnaire to measure student's attitudes towards the purchase of two-wheelers/ready-made garments/educational service/television programs. Administer the questionnaire you have developed on selected students (sample size of 25 students) in your college. Discuss any response related problems you encountered.
- Based on the above survey, carryout the analysis & interpretation of data. Short report should be submitted for evaluation of acquired skills of marketing research.
- Participate in any online/ Internet marketing research program and identify the key characteristics of the program.

REFERENCE BOOKS:

- 1) *Boyd, Westfall & starch, Marketing Research, text & cases, seventh edition, AITBS New Delhi.*
- 2) *G.c.Beri, Marketing Research, Tata McGraw Hill publishing company, New Delhi.*
- 3) *Prof.M.N.Mishra, Modern Marketing Research; First Edition, Himalaya Publishing House, Mumbai.*
- 4) *Suja.R.Nair, Marketing Research, First Edition, Himalaya Publishing House, Mumbai.*
- 5) *Amanathulla, Marketing Research.*
- 6) *Malhotra, Marketing Research.*
- 7) *N.P Reddy Marketing Research 2nd Edition.*

6.5 ADVERTISING & MEDIA MANAGEMENT

OBJECTIVE

To familiarize the students about the concepts of Advertisement and Media Management, Campaign Planning and Organizing Functions.

Unit 1: INTRODUCTION & BASIC CONCEPTS

History of advertising; Advertising purpose and functions; Economic, social & ethical aspects of advertising; Advertising & the marketing mix, Advertising as a communication process; types of advertising; Major Institutions of advertising management.

Unit 2: ADVERTISING AND CAMPAIGN PLANNING

Marketing strategy & situation analysis; Advertising plan; Advertising objectives; DAGMAR approach; advertising strategy; Advertising campaign-planning process.

Unit 3: CREATIVE STRATEGY & ADVERTISING BUDGET

Creative approaches; the art of copywriting; Advertising copy testing; advertising communication, motivational approaches & appeals, advertising budget process; methods of determining advertising appropriations.

Unit 4: ADVERTISING MEDIA STRATEGY

Role of media; types of media; their advantages and disadvantages; media advertising decisions; media planning, selection & scheduling strategies.

Unit 5: ADVERTISING EFFECTIVENESS & ORGANISING ADVERTISING FUNCTIONS.

12 hrs

Methods of measuring advertising effectiveness; advertising research; structure & functions of an advertising agency; selection & co-ordination of advertising agency; Advertising regulations; Internet advertising.

SKILL DEVELOPMENT:

- Sketch the competitive position for the development of an advertising plan for Sahara Airlines & Tata Telephones.
- Define the advertising objectives on DAGMAR Approach for any product of your choice.
- By selecting an appropriate theme & appeal, create & enact an advertisement for a range of any established products. For this purpose, the class should be divided into groups and formal presentations have to be evaluated.
- Select two print & electronic media for the purpose of understanding the functions of advertising media. Comparative analysis of the same should be done & short reports must be prepared.
- Get into the exciting world of internet / Net advertising and identify the message content of 10 products / Services of your choice.

REFERENCE BOOKS:

- 1) Rajeev Batra, John.G.Myers.T.David.A.Aaker; *Advertising Management; 5th Edition, PHI Edition, New Delhi, 1998.*
- 2) *Jefkins & Yadin; Advertising, 4th Edition; Pearson Education, New Delhi, 2000.*
- 3) *3. Manendra Mohan; Advertising Management - Concepts & Cases; Tata McGraw Hill Publishing company Ltd, New Delhi 2001.*
- 4) *S.A.Chunnawalia & K.c.Sethia Foundations of Advertising - Theory & Practice, Himalaya Publishing House, 2002.*
- 5) *Sonatakki, Advertising.*
- 6) *Wells, Advertising.*
- 7) *C.S Rayudu Media and Communication Management.*
- 8) *Murthy/ U Bhojanna ; Advertising in IMC*

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6.6 RETAIL MANAGEMENT

OBJECTIVE

To expose students to acquire skills in Retail Management.

Unit 1: INTRODUCTION TO RETAILING

10 Hrs

Definition - functions of retailing - types of retailing - forms of retailing based on ownership. Retail theories - Wheel of Retailing - Retail life cycle. Retailing in India - Influencing factors - present Indian retail scenario. Retailing from the International perspective

Unit 2: CONSUMER BEHAVIOUR IN THE RETAIL CONTEXT

12 Hrs

Buying decision process and its implication to retailing - influence of group and individual factors. Customer shopping behaviour Customer service satisfaction. Retail planning process - Factors to consider - Preparing a complete business plan - implementation - risk analysis.

Unit 3: RETAIL OPERATIONS

10 Hrs

Choice of Store location - Influencing - Factors Market area analysis - Trade area analysis - Rating Plan method - Site evaluation. Retail Operations: Store Layout and visual merchandising - Store designing - space planning. Retail Operations: Inventory management - Merchandise Management - Category Management.

Unit 4: RETAIL MARKETING MIX

12 Hrs

Retail marketing mix - an Introduction. Retail marketing mix: Product - Decisions related to selection of goods (Merchandise Management revisited) - Decisions related to delivery of service. Retail marketing mix: Pricing - Influencing factors - approaches to pricing - price sensitivity - Value pricing - Markdown pricing. Retail marketing mix: Place - Supply channel - SCM principles - Retail logistics - computerized replenishment system - corporate replenishment policies. Retail marketing mix: Promotion - Setting objectives - communication effects - promotional mix. Human Resource Management in Retailing - Manpower planning - recruitment and training - compensation - performance appraisal.

Unit 5: IMPACT OF IT IN RETAILING

08 Hrs

Non store retailing The impact of Information Technology in retailing - Integrated systems and networking - EDI - Bar coding - Electronic article surveillance - Electronic shelf labels - customer database management system. Legal aspects in retailing. Social issues in retailing. Ethical issues in retailing.

BOOKS FOR REFERENCE

- 1) Barry Bermans and Joel Evans: "Retail Management - A Strategic Approach", 8th edition, PHI private limited, Newdelhi, 2002.
- 2) A.J.Lamba, "The Art of Retailing", 1st edition, Tata McGrawHill, Newdelhi, 2003.
- 3) Swapna Pradhan : Retailing Management, 2/e, 2007 & 2008, TMH
- 4) James R. Ogden & Denise T.: Integrated Retail Management
- 5) Ogden : Biztantra, 2007
- 6) Levy & Weitz : Retail Management -TMH 5th Edition 2002
- 7) Rosemary Varley, Mohammed Rafiq-: Retail Management
- 8) Chetan Bajaj : Retail Management -Oxford Publication.
- 9) Uniyal & Sinha : Retail Management - Oxford Publications.
- 10) Suja nair; Retail Management
- 11) R.S Tiwari ; Retail Management, HPH
- 12) Araif Sakh ; Retail Management
- 13) A Sivakumar : Retail Marketing , Excel Books

4. INFORMATION & TECHNOLOGY GROUP

5.5 ACCOUNTING INFORMATION SYSTEMS

Objective: *Accounting Information Systems is concerned with the way computerized information systems impact how accounting data is captured, processed, and communicated. It introduces the technology, procedures, and controls that are necessary in modern accounting field.*

Unit – 1: The Information System: An Accountant's Perspective 10 hours
The Information Environment - What Is a System? An Information Systems Framework, AIS Subsystems, A General Model for AIS, Acquisition of Information Systems Organizational Structure - Business Segments, Functional Segmentation, The Accounting Function, The Information Technology Function. Evolution of Information System Models - The Manual Process Model, The Flat-File Model, The Database Model, The REA Model, Accountants as System Designers, Accountants as System Auditors

Unit – 2: Introduction to Transaction Processing 10 hours
An Overview of Transaction Processing - Transaction Cycles, The Expenditure Cycle, The Conversion Cycle, The Revenue Cycle, Accounting Records - Manual Systems, The Audit Trail, Computer-Based Systems, Documentation Techniques - Data Flow Diagrams and Entity Relationship Diagrams Flowcharts, Record Layout Diagrams, Computer-Based Accounting Systems - Differences between Batch and Real-Time Systems, Alternative Data Processing Approaches, Batch Processing Using Real-Time Data Collection, Real-Time Processing.

Unit – 3: Computer-Based Accounting Systems 10 hours
Automating Sales Order Processing with Batch Technology, Keystroke, Edit Run, Update Procedures, Reengineering Sales Order Processing with Real-Time Technology, Transaction Processing Procedures, General Ledger Update Procedures, Advantages of Real-Time Processing, Automated Cash Receipts Procedures, Reengineered Cash Receipts Procedures, Point-of-Sale (POS) Systems, Daily Procedures, End-of-Day Procedures, Reengineering Using EDI, Reengineering Using the Internet. Control Considerations for Computer-Based Systems. PC-Based Accounting Systems - PC Control Issues.

Unit – 4: Financial Reporting and Management Reporting Systems 10 hours
Data Coding Schemes - A System without Codes, A System with Codes, Numeric and Alphabetic Coding Schemes, The General Ledger System, The Journal Voucher, The GLS Database, GLS Procedures, The Financial Reporting System - Sophisticated Users with Homogeneous, Information Needs, Financial Reporting Procedures, Controlling the FRS. The Management Reporting System, Factors that Influence the MRS, Management Principles, Management Function, Level, and Decision Type Problem Structure, Types of Management Reports, Responsibility Accounting, Behavioral Considerations.

Unit – 5: Computer Controls and Auditing IT Controls 10 hours
Relationship between IT Controls and Financial Reporting, Audit Implications of Sections **IT Governance Controls, Organizational Structure Controls**, Segregation of Duties within the Centralized Firm, The Distributed Model, Creating a Corporate IT Function, Audit Objectives Relating to Organizational Structure, Audit Procedures Relating to Organizational Structure.

Unit – 6: Computer Center Security and Controls 10 hours
- Computer Center Controls Disaster Recovery Planning - Providing Second-Site Backup, Identifying Critical Applications, Performing Backup and Off-Site Storage Procedures,

Creating a Disaster Recovery Team, Testing the DRP, Audit Objective: Assessing Disaster Recovery Planning, Audit Procedures for Assessing Disaster Recovery Planning

References:

1. **Accounting Information Systems**, 11/E **Marshall B. Romney**, Brigham Young University **Paul J. Steinbart**, Arizona State University, Prentice Hall
2. **The Crossroads of Accounting and IT** Donna Kay, Ali Ovlia, May 2011, Hardback,
3. **Accounting Information Systems** International Edition 10th Edition **George Bodnar**, William Hopwood Aug 2009,.

5.6 ENTERPRISE RESOURCE PLANNING

Objectives:

This paper will orient students to understand that business processes can be integrated in a seamless chain.

UNIT 1: INTRODUCTION

10 hours

Introduction To ERP, Evolution of ERP, What is ERP? Reasons for the growth of ERP, Scenario and Justification of ERP in India, Evaluation of ERP, Various Modules of ERP, Advantage of ERP.

UNIT 2: ERP ENVIRONMENT

10 hours

An overview of Enterprise, Integrated Management Information, Business Modeling, ERP for Small Business, ERP for make to order companies, Business Process Mapping for ERP Module Design, Hardware Environment and its Selection for ERP Implementation.

UNIT 3: ERP RELATED TECHNOLOGIES

10 hours

ERP and Related Technologies, Business Process Reengineering (BPR), Management Information System (MIS), Executive Information System (EIS), Decision support System (DSS), Supply Chain Management (SCM)

UNIT 4: ERP MODULES

10 hours

ERP Modules, Introduction to Finance, Plant Maintenance, Quality Management, Materials Management

UNIT 5: ERP Market

10 hours

ERP Market, Introduction, SAP AG, Baan Company, Oracle Corporation, People Soft, JD Edwards World Solutions Company, System Software Associates, Inc. (SSA) QAD, A Comparative Assessment and Selection of ERP Packages and Modules.

Skill Development:

Prepare a list of companies that provide ERP packages and their features.

BOOKS FOR REFERENCE:

1. *ERP* : Alexis Leon, Leon Publishers
2. *"Managing Business Process Flows"* : Ravi Anupindi, Suni Chopra, " , Pearson Education.
3. *Enterprise Resource Planning* : Altekar, PHI.
4. *Enterprise Resource Planning* : Srivatsava, I.K. International Publishers
5. *ERP* : Vinod Kumar Garg and N.K. Venkitakrishnan, PHI.
6. *Introduction to SAP, an Overview of SD* : MM, PP,FI/CO Modules of SAP.
7. *Enterprise Resource Planning* : Zaveri Jyotindra
8. *Enterprise Resource Planning* : C.S. V Murthy
9. *Enterprise Resource Planning* : P. Diwan

6.6 BANKING TECHNOLOGY AND MANAGEMENT

OBJECTIVE

The objective of this course is to acquaint students with the banking technology and their recent developments. Also it will enhance the students with live picture of modern banking concepts and Techniques.

Unit 1: BRANCH OPERATION AND CORE BANKING

10 Hours

Introduction and evolution of bank management – Technological impact in banking operation – Total branch computerization – Concept of opportunities – Centralized banking – Concept, opportunities, challenges and implementation

Unit 2: DELIVERY CHANNELS

10 Hours

Over of delivery channels – Automated Teller machine (ATM) – Phone banking – call centers – Internet banking – Mobile banking – Payment gateways – Card technologies – MICR electronic clearing

Unit 3: BACK OFFICE OPERATIONS

10 Hours

Bank back office management – Inter branch reconciliation – Treasury management – Forex operations – Risk management – Data center management – Network management – Knowledge management (MIS/DSS/EIS) – Customer relationship management (CRM).

Unit 4: INTER BANK PAYMENT SYSTEM

10 Hours

Interface with payment system network – structured financial messaging system – Electronic fund transfer – RTGSS – Negotiated dealing systems and securities settlement systems – Electronic Money – E-cheques.

Unit 5: CONTEMPORARY ISSUES IN BANKING TECHNIQUES

10 Hours

Analysis of Rangarajan committee reports – E Banking budgeting – Banking software's.

REFERENCES

1. Kaptan S S & Choubey N S, "E-Indian Banking in Electronic Era", Sarup & Sons, New Delhi 2003.
2. Vasudeva, "E-Banking", Common Wealth Publishers, New Delhi, 2005.
3. Chandramohan : Fundamental of Computer Network I.K. International Publishers
4. Effraim Turban, Rainer R. Kelly, Richard E.Potter, "Information Technology", John Wiley & Sons Inc, 2000.
5. Andrew S. Tanenbaum, "Computer Networks", Tata Mcgraw Hill, 3rd Edition, 2001
6. Padwal & Godse : Transformation of Indian Banks with Information Technology.

6.5 INFORMATION TECHNOLOGY AND AUDIT

OBJECTIVE: This subject aims at imparting knowledge about auditing done with the use of information technology

Unit 1: INTRODUCTION TO AUDITING SOFTWARE **10 Hrs**

Introduction – Meaning - Definition -- Preparation of Audit Working Papers –Tally ERP 9 Auditors Edition: Introduction, features, characteristics – Tally.Net: features – requirements for remote connectivity – Access information via SMS, Safeguard Data – Automated Backup and Recovery.

Unit 2: AUDIT OF SUBSIDIARY BOOKS **10 Hrs**

Cash book: Checking of Receipts and Payments, vouchers, Checking of Bank Transaction, BRS. Petty cash transaction: sales day book, purchase day book, sales return book, Purchase Return Book, Bills Receivable book, Bills payable book.

Unit 3: AUDIT OF FINANCIAL STATEMENTS **12 Hrs**

Configuring profit/Loss account, display profit/loss account, Audit of profit/loss account, Configuring balance sheet, display the balance sheet, Display balance sheet with different stock valuation methods, setting closing stock manually in the balance sheet. Balance sheet of joint stock companies.

Unit 4: TAX AUDIT **12 Hrs**

Extracting financial and quantitative information required for Tax Audit (under Sec. 44AB), Displaying relevant data for Audit based on Clause requirement, Instant Statistics on Audit Listings (Audited Vouchers & Unaudited Vouchers), record Audit Remarks using Audit Notes, Provision to mark Vouchers for Clarification / Verification from Clients, Provides facility to post corrections and reviews remotely, Tracking any alteration / modification to vouchers post Audit, Generate Annexure to Form 3CD, Printing of Form 3CD along with Annexure I and II, Printing of Form 3CA and Form 3CB

Unit 5: STATUTORY AUDIT **10 Hrs**

Creation and maintenance of Audit Programme, create the Audit Programme as pre audit activity, Supports to prepare and maintain **Audit Working Papers**, Facility to mark the applicable and compiled **Accounting Standards** for a company. Extracting the financial information required for Statutory Audit, Displaying the relevant data in the required form for analysis, Audit the Vouchers along with instant statistics, Track and audit the Related Party. Mechanism to Audit and interact with the Client remotely, generate the following Financial Statements as per the format specified in Company's Act: Schedule VI Balance Sheet, Schedule VI P&L Statement.

SKILL DEVELOPMENT:

- Maintain a computer record and execute the problems

BOOKS FOR REFERENCE:

1. Learning Tally ERP 9, Vishnu Pratap Singh, Computech publications limited, 3rd Revised edition.
2. Guide to Tally 9, Law Point,
3. Tally Ver 9, C Nellai Kannan, Nels publication, ISBN 81-901408-2-5.

5. HUMAN RESOURCE GROUP

5.5 STRATEGIC HUMAN RESOURCE MANAGEMENT

OBJECTIVE

To expose students to acquire skills in Strategic Human Resource Management.

Unit 1: INTRODUCTION TO STRATEGIC HRM

12 Hrs

Strategic role of HRM, Planning and Implementing Strategic HR policies, HR Strategies to increase firm performance.

Unit 2: INVESTMENT PERSPECTIVES OF HR

12 Hrs

Investment Consideration, investments in Training and Development, investment Practices for improved Retention, investments job secure work courses, Nontraditional investment Approaches.

Unit 3: MANAGING STRATEGIC ORGANIZATION

12 Hrs

Managing Strategic Organizational renewal- Managing change and OD, instituting TQM Programmes, Creating Team based Organizations, HR and BPR, Flexible work arrangement.

Unit 4: ESTABLISHING STRATEGIC PLANS

12 Hrs

Establishing Strategic pay plans, Determining periods, Establishing periods, Pricing Managerial and professional jobs, Compensation trends, Objectives of international Compensation, Approaches to international Compensation, Issues related to double taxation. Cases.

Unit 5: GLOBAL HRM

12 Hrs

Managing Global Human Resources-HR and the internationalization of business, Improving international Assignments through selections, Training and maintaining international Employees, Developing international Staff and Multinational Teams, Multinational, Global, and Transnational Strategies, Strategic Alliances, Sustainable Global Competitive Advantage, Globally Competent Managers, Location of Production Facilities.

BOOKS FOR REFERENCES

- 1) Gary Dessler, *Human Resource Management*, PHI, New Delhi, 2003.
- 2) Charles R. Greer, *Strategic Human Resource Management*, Pearson Education, 2003.
- 3) Luis R. Gomez-Mejia, David B. Balkin, Robert L. Cardy, *Managing Human Resources*, PHI, 2001.
- 4) Rajkumar : *Human Resource Management I.K. International Publishers*
- 5) Peter J. Dowling, Denise E. Welch, Randall S. Schuler, *International Human Resource Management*, Thomson South-Western, 2002.
- 6) Rajesh Visvanathan : *Strategic Human Resource Management*
- 7) R. Regis : *Strategic Human Resource Management*

5.6 HUMAN RESOURCE DEVELOPMENT

OBJECTIVE

The objective of this course is to enable the students to understand the various concepts of Human Resources Development and also the recent trend in HRD.

UNIT - 1: Human resource Development 6 Hrs
Meaning and Importance of human resource development, Objectives of human resource development. Scope of human resource development

UNIT - 2: TRAINING AND DEVELOPMENT 12 Hrs
Orientation and training, Orienting employees, the training process, training needs analysis, training techniques, evaluating training efforts, Methods of training, sensitivity training - types roles of instructor, method, feedback, goals, misconceptions; case study, role play, business game, in-basket exercise, designing training program, actual practice, Designing training program - performance appraisal as a tool.
Development, Nature and purpose of management development, managerial on-the-job training, job rotation and management, off-the-job management development techniques, computerised managerial assessment and development program, using HR to build a responsive learning organization.

UNIT - 3: ORGANISATIONAL DEVELOPMENT 8 Hrs
Introduction, definition and concept, characteristics, operational goals of OD, conditions for OD success, Phases of OD, Techniques of OD- sensitivity training, benefits and limitation, what is a change process? Types of change, managing resistance, OD assumptions.

UNIT - 4: DEVELOPMENT OF MANAGERS IN HRD 6 Hrs
Meaning of Potential Appraisal, meaning of counselling, counselling as a process of developing in organisation. Definition and concept counselling, objectives, what constitutes, conditions for effective counselling, process of counseling.

UNIT - 5: MANAGING QUALITY AND PRODUCTIVITY 6 Hrs
Alternative work arrangements, using quality circle programs, attitude surveys, Total quality management programs, creating self-directed teams, extending participative decision making, HR and business process reengineering.

UNIT - 6: TRANSACTIONAL ANALYSIS 8 Hrs
Definition, origins, philosophy of TA, goals, what is TA? 6 key concepts, Ego states, Transactions - Cross, Parallel, Ulterior
Strokes - different types, negative strokes, strokes economy
Life positions - I am ok You are ok and others, its relevance to managers, co-relative with self-esteem, attitudes
Time structuring - rituals to intimacy.

UNIT - 7: RECENT TRENDS IN THE AREA OF HRD 4 Hrs
Recent trends in the area of HRD - Personality quotient, Emotional quotient and others, the use of computer and the internet

SKILL DEVELOPMENT:

BOOKS FOR REFERENCE:

1. Pandey, Human Resource Development.
2. Rao and T.V. Verma, Human Resource Development.
3. Jean Marleen, Performance Oriented Human Resource Development.
4. Lalitha Balakrishna & Others : Human Resource Development.
5. Gupta & Chhabra : Human Resource Information System
6. D. K Bhattacharya : Human Resource Development.
7. R. Krishnaveni : Human Resource Development.

6.5 LABOUR WELFARE & SOCIAL SECURITY

OBJECTIVE

To expose students to acquire skills in Labor Welfare & Social Security.

Unit 1: SOCIAL & LABOUR WELFARE

12 Hrs

Social Welfare; Labour Welfare: Concept, Scope; Philosophy and Principles of Labour Welfare; Indian constitution and Labour Welfare; Labour Welfare Policy and Five Year Plans, Historical Development of Labour Welfare in India;

Unit 2: INDIAN LABOUR ORGANIZATION

12 Hrs

Impact of ILO on Labour Welfare in India; Agencies of Labour Welfare and their Roles, Labour Welfare Programmes: Statutory and Non-Statutory, Extra Mural and Intra Mural. Welfare Centers; Welfare Officer: Role, Status and Functions.

Unit 3: SOCIAL SECURITY

12 Hrs

Concept and Scope; Social Assistance and Social Insurance, Development of Social Security in India; Social Security measures for Industrial Employees.

Unit 4: LABOUR ADMINISTRATION - 1

12 Hrs

Evolution of Machinery for Labour Administration; Central Labour Administrative Machinery in India, Labour Administration in India.

Unit 5: LABOUR ADMINISTRATION - 2

12 Hrs

Director General of Employment and Training; Director General of Factory Advice Service; Provident Fund Organization; ESI Schemes; Central Board for workers' Education;

BOOKS FOR REFERENCE

- 1) Moorthy, M.V. *Principles of Labour Welfare*, Oxford & IBH Publishing Co., New Delhi.
- 2) Vaid, K.N. *Labour Welfare in India*, Sree Ram Centre for Industrial Relations and Human Resources, New Delhi:
- 3) Sharma, A.M. *Aspects of Labour Welfare and Social Security*, Himalaya Publishing, House, MuMHRMi.
- 4) Ram Chandra P. Singh, *Labour Welfare Administration in India*, Deep & Deep Pub., New Delhi:
- 5) Punekar, S.D. Deodhar S.B., Sankaran, Saraswathi, *Labour Welfare, Trade Unionism and Industrial Relations*, Himalaya Pub. House, Mumbai.
- 6) Pant, S.C., *Indian Labour Problems*, Chaitanya Pub. House, Allahabad.
- 7) Saxena, R.C., *Labour Problems and Social Welfare*, K. Nath & Co., Meerut;
- 8) Bhogiliwala, T.N. *Economics of Labour & Industrial Relations*, Sahitya Bhavan Pub., Agra;
- 9) Memoria, C.B. *Dynamics of Industrial Relations in India*, Himalaya Pub. House, MuMHRMi.
- 10) B.D Singh: *Labour Laws for Managers*

6.6 INDUSTRIAL REGULATIONS

OBJECTIVE

To enable the students to understand the various laws relating to Industrial Labor.

Unit 1: PAYMENT OF WAGES ACT – 1936

10 Hrs

Definitions; Responsibility for payment of wages; fixation of Wage period; Time of Payment of Wages; Mode of Payment; Deductions from wages for absence from duty, damage or loss, for services rendered, recovery of advances & loans; Maintenance of registers and records; Penalty for offences; Payment of undisbursed wages in case of death.

Unit 2: PAYMENT OF BONUS ACT – 1965

08 Hrs

Definitions, eligibility for bonus, payment of minimum and maximum bonus, disqualification for bonus, set on and set off allocable surplus, time limit for payment of bonus.

Unit 3: EMPLOYEE STATE INSURANCE ACT – 1948

12 Hrs

Contributions:-who is to be insured, principle employer to pay contribution in the first instance, general provisions as to payment of contributions, method of payment.
Benefits: - Sickness benefit, maternity benefit, disablement benefit, presumptions as to accidents arising in course of employment, dependents benefit, medical benefits.
Penalties: - Punishment for false statement, punishment for failure to pay contributions and prosecutions.

Unit 4: WORKMEN COMPENSATION ACT:

12 Hrs

Introduction, Scope, accidents arising during and in the course of employment, circumstance when the workmen is basic or not basic for compensation.

Unit 5: PAYMENT OF GRATUITY ACT – 1972

08 Hrs

Definitions, continuous service, payment of gratuity, compulsory insurance, determination of the amount of gratuity.

Unit 6: FACTORIES ACT – 1948

10 Hrs

Health: - cleanliness, disposal of waste, ventilation, dust and fume, artificial humidification, overcrowding, lighting, drinking water, toilets, spittoons.
Safety: -Fencing of machinery, work on or near machinery in motion, employment of young persons on dangerous machines, Safety officer.
Welfare: -Washing facilities, facilities for storing and drying clothing, facilities for sitting, first aid appliances canteens, shelters and restrooms, crèches. Working hours for adults, annual leave with wages.

Unit 7: MINIMUM WAGE ACT – 1948

12 Hrs

Definitions, fixing of minimum rates of wages, minimum rate of wages, procedure for fixing and revising minimum wages, wages in kind, payment of minimum rates of wages, fixing hours a normal working day, over time. Employees provident funds and miscellaneous provisions act 1952: - Short title & Extent; Definitions, Employment provident fund scheme, employees' pension scheme, employees deposit linked insurance scheme.

BOOKS FOR REFERENCE

- 1) AM Sarma, *Aspects of Labour Welfare & Social Security*
- 2) MS Pandit & Shobha Pandit, *Business Law*
- 3) P.L.Malik, *Industrial Law*
- 4) N.D.Kapoor, *Industrial Law*
- 5) B.D Singh: *Industrial Relations*

6. BANKING & INSURANCE GROUP

5.5 INTERNATIONAL BANKING & FOREX MANAGEMENT

Objective

The objective of this course is to enable the students to understand the various concepts of international banking and foreign exchange rate determination.

UNIT 1 : INTRODUCTION TO INTERNATIONAL BANKING 10 Hrs

Introduction - Meaning - Functions - Financing of Exports - Financing of Imports - International Payment Systems.

UNIT 2 : INTERNATIONAL CAPITAL MARKETS 10 Hrs

Introduction - meaning and Definition - Types - Financial market flow beyond national boundaries - Debt and non - debt flows - Volatile and Stable flows - interest rate differentials - Demand for and supply of funds across borders.

UNIT 3 : OFFSHORE BANKING CENTRES 10 Hrs

Introduction - Meaning - Role in International Financing - Global Balance sheet of bank - Asset and Liability Management of Foreign Banks.

UNIT 4 : FOREIGN EXCHANGE AND MARKETS 15 Hrs

Introduction - Meaning - Elements - Importance - Evolution of Exchange Rate System - International Monetary System - Gold Standard - types of exchange rates - Fluctuations in Foreign Exchange rates - Causes and Effects - Need for Stable foreign exchange Rates - Determination of Exchange rates - Theories of Determination of Foreign Exchange Rates.

UNIT 5 : FOREX MARKET IN INDIA 15 Hrs

Introduction - Meaning - Types - Operations - Convertibility - Objectives of Foreign Exchange Control - Problems of Foreign Exchange market in India - Mechanism to settle the problems - Role of RBI in settlement of foreign exchange problems in India.

Skill Development

- Chart showing the currencies of Different countries.
- Table showing one month foreign exchange rates of Rupee and US \$
- Role of RBI in settlement of foreign exchange problems in India.
- Global Balance sheet of a bank
- Comment on Asset and Liability Management of a Foreign Bank.

BOOKS FOR REFERENCE

1. Harris Manville, *International Finance*.
2. Keith Pibean, *International Finance*.
3. Timothy Carl Kesta, *Case and Problems in International Finance*.
4. Avadhani B.K, *International Finance Theory and Practice*.
5. Somanatha: *International Financial Management* I.K. International Publishers
6. P.A. Apte, *International Financial Management*.
7. Madhu Vij, *International Finance*.
8. Levi, *International Marketing Management*.
9. Chaudhuri & Agarwal *Foreign Trade & Foreign Exchange*, HPH

5.6 LIFE & GENERAL INSURANCE

OBJECTIVE

To enable the students to understand various aspects of Life & General Insurance.

Unit 1: INTRODUCTION TO LIFE INSURANCE 10 Hrs

Introduction to Life Insurance - Principles of Life Insurance - Life insurance products, pensions and annuities - Life insurance underwriting - Need for selection - Factors affecting rate of mortality - Sources of data - Concept of extra mortality - Numerical methods of undertaking - Occupational hazards.

Unit 2: LEGAL ASPECTS OF LIFE INSURANCE 10 Hrs

Legal Aspects of Insurance - Indian contract Act, special features of Insurance contract. Insurance laws, Insurance Act, LIC Act, IRDA Act.

Unit 3: CLAIM MANAGEMENT & RE-INSURANCE 10 Hrs

Claim Management - Claim Settlement - Legal Framework - Third party Administration, Insurance ombudsman - Consumer Protection Act - Re-Insurance in Life Insurance - Retention Limits - Methods of re-insurance.

Unit 4: INTRODUCTION TO GENERAL INSURANCE 10 Hrs

Introduction to General Insurance. Principles of General Insurance. Types of General Insurance - Personal general insurance products (fire, personal liability, motors, miscellaneous insurance). Terminology, clauses and covers. Risk assessment, underwriting and ratemaking. Product design, development and evaluation. Loss Provincial control.

Unit 5: INSURANCE INDUSTRY 10 Hrs

Insurance industry - Brief History - Pre Nationalization and post nationalization - Current scenario.- Re-Insurance - Functions, Methods of re-Insurance.

BOOKS FOR REFERENCE

- 1) P. Perya Swamy ;Principles and Practice of Life Insurance
- 2) Raman B, Your Life Insurance Hand Book
- 3) William C. Arthur, Risk Management and Insurance
- 4) Gopal Krishnan, Liability Insurance
- 5) Aramvalarthan ; Risk Management I.K. Intl
- 6) Mishra M.N, Insurance Principles and Practice
- 7) Bose A.K, Engineering Insurance
- 8) Fire Insurance Claim - Insurance institute of India
- 9) P. K Gupta; Insurance & Risk Management
- 10)G. Krishna Swamy: A Text book on Principles and Practices of Life Insurance

6.5 RISK MANAGEMENT

OBJECTIVE

To expose students to acquire skills in Risk Management.

Unit 1: INTRODUCTION TO RISK MANAGEMENT 12 Hrs

Introduction to risk management- elements of uncertainty peril, Hazards – types risk management process - definition, types and various means of managing risk - limitations of risk management.

Unit 2: SOURCES OF RISK AND EXPOSURE 12 Hrs

Sources of risk and exposure, pure risk and speculative risk, acceptable and non-acceptable risks, static and dynamic risk, various elements of cost of risk.

Unit 3: CORPORATE RISK MANAGEMENT 12 Hrs

Corporate risk management, riskiness of returns, approaches and processes of corporate risk management, management of business risk, currency and interest rate risk, assets and liability management, - guidelines and tools of risk management.

Unit 4: DERIVATIVES AS RISK MANAGEMENT TOOLS 12 Hrs

Derivatives as risk management tools, features of hedging, forward, future, options and swaps. Classification of derivatives, important features of derivatives.

Unit 5: HEDGING & OPTIONS 12 Hrs

Hedging risks with currency and interest rate futures, index future and commodity futures, Fundamental concepts of options and hedging and risk management with options, Fundamentals of currency and interest rate swaps- risk management with swaps, Fundamental concepts of VAR approach and insurance.

SKILL DEVELOPMENT

- Understand the elements of Corporate Risk Management. Adequate exposure to the functioning of Risk Management tools.

BOOKS FOR REFERENCE

- 1) Gopal Krishnan, *Liability Insurance*
- 2) Mishra M.N, *Insurance*
- 3) Mishra M.N, *Insurance Principles and Practice*
- 4) Bose A.K, *Engineering Insurance*
- 5) *Fire Insurance Claim - Insurance institute of India*
- 6) Aramvalathan : *Risk Management I.K. International Publishers*
- 7) *Life Insurance Claims - Insurance institute of India*
- 8) Gupta S.P, *Liability and Engineering Insurance*
- 9) Gupta S.P, *Marine Insurance Claim*
- 10) G. Kotheshwar Rao - *Risk Management*
- 11) N. Gulati - *Risk Management*

6.6 MARKETING OF INSURANCE PRODUCTS

OBJECTIVE

To enable the students to acquire skills in Marketing of Insurance Products

Unit 1: INTRODUCTION TO MARKETING IN THE INSURANCE INDUSTRY 15 hrs

The role of the customer in marketing, The definition of marketing, Marketing and other related business functions within the insurance industry, Creating a marketing strategy for insurance products, Impact of external and internal factors on the marketing strategy, External considerations including: Social - Economic - Competition - Technological - Ecological and Meteorological - Consumer protection, Internal considerations including: Structure - Behaviour - Values.

Unit 2: MARKETING THEORY AND CONCEPTS IN THE INSURANCE INDUSTRY 15 hrs

Insurance customers and their buying patterns, Supply and demand in the insurance industry (including insurance cycle), The marketing mix, Segmentation of existing and prospective customers, Competitive positioning, Differentiation of the product, Financial Value Chain analysis, Portfolio management, The life cycle of insurance products, Analyzing existing insurance customers, Core competencies, Internal auditing of marketing practices, SWOT analysis.

Unit 3: DEVELOP A MARKETING STRATEGY FOR INSURANCE PRODUCTS 15 hrs

Identifying segments in insurance customers, Customer's attributes and behaviours, Using data from customer relationship management systems to feed into strategy, Identifying competitors, Competitor's portfolio of offerings and position, Developing a portfolio of opportunities, Scenario testing, Taking a position in the market, Value and supply chain analysis, Pricing, Regulation, Branding insurance products and services, Establishing a brand, The importance of branding, Brand awareness, Brand extension, White labeling.

Unit 4: IMPLEMENT AND DELIVER A MARKETING STRATEGY 15 hrs

Communicating the marketing message for insurance products and services, The marketing communications portfolio, The marketing message, E-marketing, Advertising, Sales and account management, Public relations, Promotion, Sponsorship, Emergency communications plan, Distributing insurance and finance products and services, Different channels for distribution (including Call centers), Distribution options: Financial advisers - Intermediaries / brokers - Direct selling - Financial institutions, including banc assurance - Aggregators - Other organizations distributing insurance, Risk assessment, Service delivery, Customer experience, including claims, Managing the customer relationship.

BOOKS FOR REFERENCE

- 1) *Marketing: concepts and strategies*. Sally Dibb ... [et al]. 5th European ed. Boston, Massachusetts: Houghton Mifflin, 2005.
- 2) *The marketing casebook*. Sally Dibb, Lyndon Simpkin. 2nd ed. London: Thomson Learning, 2001.
- 3) *Marketing management*. Philip Kotler. 13th ed. London: Pearson Education, 2009.
- 4) *Marketing planning for financial services*. Roy Stephenson. Aldershot, Hants: Gower, 2005.
- 5) *Marketing strategy: the difference between marketing and markets*. Paul Fifield. 3rd ed. London: Butterworth-Heinemann, 2007.
- 6) *Marketing theory: a student text*. Michael J Baker. London: Thomson Learning, 2000.
- 7) *Principles of marketing*. Philip Kotler, Gary Armstrong. 12th ed. International ed. Upper Saddle River, New Jersey: Pearson Education, 2008
- 8) *Innovative Marketing balancing Commercial goals & Corporate responsibility*
- 9) *A Mishra/A Mishra - Marketing strategy*.



BANGALORE UNIVERSITY

SYLLABUS 2012-13
BBM Degree Semester Scheme

DEPARTMENT OF COMMERCE
Bachelor of Business Management
Central College Campus, Bangalore – 560 001

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for the
concerned

[Signature]
03/5/12


BANGALORE UNIVERSITY
DEPARTMENT OF COMMERCE

REGULATIONS PERTAINING TO BBM DEGREE SEMESTER SCHEME

I. Objectives :

1. To develop entrepreneurs
2. To develop ethical managers with inter disciplinary knowledge
3. To develop business philosophers with a focus on social responsibility and ecological sustaina.
4. To prepare students to take the responsibility of full line of marketing function of a company with special reference to SME sector.
5. To prepare students to take the responsibility of full line of human resource function of a company with special reference to SME sector.
6. To develop IT enabled global middle level managers for solving real life business problems and addressing business development issues with a passion for quality, competency and holistic approach.
7. To prepare students to take up higher education to become business scientists, researchers, consultants and teachers, with core competencies.

II. Eligibility for Admission:

Candidates who have completed two - year Pre - University course of Karnataka State or its equivalent are eligible for admission into this course.

III. DURATION OF THE COURSE:

The course of study is 3 years of six semesters. A candidate shall complete his/her degree within six (6) academic years from the date of his/her admission to the first semester.

IV. MEDIUM OF INSTRUCTION

The medium of instruction shall be English. However, a candidate will be permitted to write the examination either in English or in Kannada.

V. ATTENDANCE:

- a. For the purpose of calculating attendance, each semester shall be taken as a Unit.
- b. A student shall be considered to have satisfied the requirement of attendance for the semester, if he/she has attended not less than 75% in aggregate of the number of working periods in each of the subjects compulsorily.
- c. A student who fails to complete the course in the manner stated above shall not be permitted to take the University examination.

VI. COURSE MATRIX

See Annexure - 1

VII. TEACHING AND EVALUATION:

M.Com, M.FA., M.B.S and M.B.A. graduates with B.Com, B.B.M and B.B.S as basic degree from a recognized university are only eligible to teach and evaluate the subjects including (excepting languages, compulsory additional subjects and core Information Technology related subjects) subjects mentioned in this regulation. Languages and additional subjects shall be taught by the graduates as recognized by the respective board of studies.

IX. PROJECT REPORT AND VIVA-VOCE:

- a. The Project report in the sixth semester carries 100 marks which shall form part of Sixth semester examination.
- b. There shall be single valuation of project report and this will be done simultaneously along with Vive - Voce. Internal Assessment does not carry any marks.
- c. The principal of the college shall submit the project reports of the students, to the university within three days after the completion of VI semester examination.
- d. Candidate shall obtain a minimum of 35% marks (Including Viva-Voce) in this subject (project Report) failing which he she shall revise and resubmit before the commencement of the next examination. However, no student shall be allowed to resubmit the project report after three consecutive chances.
- e. The student who fails to submit the project report shall not be permitted to take the examination.
- f. The board of examiners or their nominees' shall conduct viva-voce examination for Project Report.

X. SKILL DEVELOPMENT / RECORD MAINTENANCE AND SUBMISSION:

- a. Every college is required to establish a dedicated business lab for the purpose of conducting practical/on line assignments to be written in the record.
- b. In every semester, the student should maintain a Record Book in which a minimum of 5 exercises/programmes per subject are to be recorded. This Record has to be submitted to the Faculty for evaluation at least 15 days before the end of each semester.

XI. SCHEME OF EXAMINATION:

There shall be a university examination at the end of each semester. The maximum marks for the university examination in a paper shall be 100 marks. For Skill development Record maintenance grades shall be awarded.

Grades for Skill Development Record maintenance shall be awarded by the teacher who taught the paper. And the teacher concerned shall hand over within three day after end of the semester period, the grade's list to the Head of the Department who in turn shall handover, within the next three days, to the principal.

The principal shall display grades on the notice board paper-wise and student-wise one week prior to the commencement of the semester examination. And the original copy of the same, duly signed by the principal, shall be sent by the principal to the registrar (Evaluation) before the commencement of the semester examination.

XII. APPEARANCE FOR THE EXAMINATION: .

A candidate shall apply for all the parts in each examination when he/she appears for the first time. A candidate shall be considered to have appeared for the examination only if:

- a. A Candidate shall apply for all the parts in each examination when he/she has submitted the prescribed application for the examination along with the required fees.
- b. A candidate who has passed any language under Part-I shall be eligible to claim exemption from the study of the language if he/she has studied and passed the language at the corresponding level.
- c. Further, candidates shall also be eligible to claim exemption from studying and passing in those commerce subjects which he/she has studied and passed at the corresponding level, subject to the conditions stipulated by the university.

- d. A candidate who is permitted to seek admission to this degree course on transfer from any other University shall have to study and pass the subjects which are prescribed by the University. Such candidates shall not however, be eligible for the award of ranks.

XIII. MINIMUM FOR A PASS:

Candidates who have obtained at least 35% of marks in aggregate in each subject shall be eligible for a pass or exemption in the subject. The minimum mark per paper is 35%. However, there is no minimum mark for pass for record maintenance.

XIV. CLASSIFICATION OF SUCCESSFUL CANDIDATES:

1. The results of the First to Sixth semester degree examination shall be declared and classified separately as follows:
 - a. First Class: Those who obtain 60% and above of the total marks of parts I, II and III.
 - b. Second Class: Those who obtain 50% and above but less than 60% of total marks of parts I, II and III.
 - c. Pass Class: Rest of the successful candidates who secure 35% and above but less than 50% of marks in part I, II and III.
2. The results of the degree course as a whole shall be declared on the basis of the aggregate marks obtained by the candidates in management subjects of the First year, Second year and Third year degree course put together as follows.
 - a. First Class: Those who obtain 60% and above of the aggregate in the commerce subjects of First year, Second year and Third year degree course.
 - b. Second Class: Those who obtain 50% and above but less than 60% of the aggregate marks in the commerce subjects of the First year, Second year and Third year degree course.
 - c. Pass Class: Rest of the successful candidates who obtain 35% and above but less than 50% of the aggregate marks in the commerce subjects of the First year, Second year and Third year degree course.
- iii) Class and Ranks shall be declared on the basis of the aggregate marks obtained by the candidates in the management subjects of the First to six semester of degree course as a whole. However, only those candidates who have passed each semester public examination in the first attempt only shall be eligible for the award of ranks. The first ten ranks only shall be notified.

XV. MEDALS AND PRIZES:

No candidates passing an external examination shall be eligible for any scholarship, fellowship, medal, prize or any other award.

XVI. CONDITIONS TO KEEP TERMS:

- a. A candidate is allowed to carry all the previous uncleared papers to the subsequent semester/semesters.
- b. Such of those candidates who have failed/remained absent/opt to improve in anyone or more papers (theory/practical/dissertation/project work/field work) henceforth called as repeaters, shall appear for exam in such paper/s during the three immediate successive examinations.
- c. Examination for odd/even semester shall be conducted respectively at the end of odd/even semester (odd with odd, even with even).
- d. The candidate shall take the examination as per the syllabus and the scheme of examination in force during the subsequent appearances.

XVII. PATTERN OF QUESTION PAPER:

Each theory question paper shall be 3 hours duration for each Examination. The Question paper shall ordinarily consist of three sections, to develop testing of conceptual skills, understanding skills, comprehension skills, articulation and application of skills. The Question Paper will be as per the following Model:

SECTION-A 1. a,b,c,d,e,f,g,h,i,j,	(Conceptual questions) Answer any EIGHT	(08 X 2 = 16 Marks)
SECTION -B: 2,3,4,5.	(Analytical questions) Answer any THREE	(03 X 8 = 24 Marks)
SECTION-C: 6,7,8,9,10.	(Essay type questions) Answer QUESTION NO. 10 and any THREE of the remaining.	(04 X 15 = 60 Marks)
Total		100 Marks

XVIII. PROVISION FOR IMPROVEMENT OF RESULTS:

The candidate shall be permitted to improve the results of the whole examination or of any Semester or any subject within 30 days after the publication of the result. This provision shall be exercised only once during the course and the provision once exercised shall not be revoked. The application for improvement of results shall be submitted to the Registrar (Evaluation) along with the prescribed fee.

XIX. REMOVAL OF DIFFICULTY AT THE COMMENCEMENT OF THESE REGULATIONS:

If any difficulty arises while giving effect to the provisions of these Regulations, the Vice-Chancellor may in extraordinary circumstances, pass such orders as he may deem fit.

BANGALORE UNIVERSITY
COURSE STRUCTURE 2012-13 Scheme
B.B.M. COURSE MATRIX

Semester No.	Paper No.	Title of the Paper	Lecture Hour Per Week	Total Marks
I	1.1	Language: Kannada / Sanskrit / Urdu / Tamil / Telugu / Additional English / Marathi / Hindi	04	100
	1.2	LANGUAGE: ENGLISH	04	100
	1.3	Fundamentals of Accounting	04	100
	1.4	Business Organisation and Environment	04	100
	1.5	Quantitative Methods for Business - I	04	100
	1.6	Market Behaviour & Cost Analysis	04	100
	1.7	Management Process	04	100
II	2.1	Language: Kannada / Sanskrit / Urdu / Tamil / Telugu / Additional English / Marathi / Hindi	04	100
	2.2	LANGUAGE: ENGLISH	04	100
	2.3	Financial Accounting	04	100
	2.4	Quantitative Methods for Business - II	04	100
	2.5	Organizational Behavior	04	100
	2.6	Production and Operations Management	04	100
	2.7	Environmental Studies	04	100
UGC	3.1	Language: Kannada / Sanskrit / Urdu / Tamil / Telugu / Additional English / Marathi / Hindi	04	100
	3.2	Soft Skills for Business	04	100
	3.3	Corporate Accounting	04	100
	3.4	Human Resource Management	04	100
	3.5	Services Management	04	100
	3.6	Corporate Environment	04	100
	3.7	Computer Fundamentals	04	100
III	4.1	Language: Kannada / Sanskrit / Urdu / Tamil / Telugu / Additional English / Marathi / Hindi	04	100
	4.2	Business Research Methods	04	100
	4.3	Marketing Management	04	100
	4.4	Financial Management	04	100
	4.5	Business Regulations	04	100
	4.6	Cost Accounting	04	100
	4.7	Indian Constitution	04	100
IV	5.1	Entrepreneurial Management	04	100
	5.2	Computer Applications in Business	04	100
	5.3	Banking Regulations & operations	04	100
	5.4	Corporate Governance	04	100
	5.5	Management Accounting	04	100
	5.6	Elective - Paper -I	04	100
	5.7	Elective - Paper -II	04	100
UGC	6.1	International Business ✓	04	100
	6.2	E-Business ✓	04	100
	6.3	Income Tax ✓	04	100
	6.4	Strategic Management	04	100
	6.5	Elective - Paper-III	04	100
	6.6	Elective - Paper -IV	04	100
	6.7	Project Report & Viva-voce (75 marks + 25 marks)		100
V	6.1	International Business ✓	04	100
	6.2	E-Business ✓	04	100
	6.3	Income Tax ✓	04	100
	6.4	Strategic Management	04	100
	6.5	Elective - Paper-III	04	100
	6.6	Elective - Paper -IV	04	100
	6.7	Project Report & Viva-voce (75 marks + 25 marks)		100
VI	6.1	International Business ✓	04	100
	6.2	E-Business ✓	04	100
	6.3	Income Tax ✓	04	100
	6.4	Strategic Management	04	100
	6.5	Elective - Paper-III	04	100
	6.6	Elective - Paper -IV	04	100
	6.7	Project Report & Viva-voce (75 marks + 25 marks)		100

ELECTIVE GROUPS**1. FINANCE GROUP**

Semester No.	Paper No.	Title of the Paper	Lecture Hour Per Week	Total Marks
V	5.6	Advanced Financial Management	04	100
	5.7	Financial Markets & Services	04	100
VI	6.5	Investment & Portfolio Management ✓	04	100
	6.6	Stock And Commodity Markets ✓	04	100

2. MARKETING GROUP

Semester No.	Paper No.	Title of the Paper	Lecture Hour Per Week	Total Marks
V	5.6	Consumer Behavior	04	100
	5.7	Advertising & Media Management	04	100
VI	6.5	Brand Management ✓	04	100
	6.6	Retail Management ✓	04	100

3. HUMAN RESOURCE GROUP

Semester No.	Paper No.	Title of the Paper	Lecture Hour Per Week	Total Marks
V	5.6	Employee Welfare & Social Security	04	100
	5.7	Strategic HRM	04	100
VI	6.5	Organizational Change & Development ✓	04	100
	6.6	Compensation Management ✓	04	100

4. INTERNATIONAL BUSINESS GROUP

Semester No.	Paper No.	Title of the Paper	Lecture Hour Per Week	Total Marks
V	5.6	International Marketing Management	04	100
	5.7	International Financial Management	04	100
VI	6.5	International HRM ✓	04	100
	6.6	Exim & Forex Management ✓	04	100

5. INFORMATION & TECHNOLOGY GROUP

Semester No.	Paper No.	Title of the Paper	Lecture Hour Per Week	Total Marks
V	5.6	Accounting Information Systems	04	100
	5.7	Enterprise Resource Planning	04	100
VI	6.5	Information Technology And Audit ✓	04	100
	6.6	Banking Technology and Management ✓	04	100

1.3 FUNDAMENTALS OF ACCOUNTING

OBJECTIVE

The objective of this course is to acquaint students with the accounting concepts, tools and Techniques influencing business organizations.

Unit 1: INTRODUCTION TO FINANCIAL ACCOUNTING **08 Hours**

Introduction – Meaning and Definition – Objectives of Accounting – Functions of Accounting – Users of Accounting Information – Limitations of Accounting – Accounting Principles – Accounting Concepts and Accounting Conventions. List of Indian Accounting Standards.

Unit 2: ACCOUNTING PROCESS **12 Hours**

Meaning – Process of Accounting – Kinds of Accounts – Rules - Transaction Analysis – Journal – Ledger – Balancing of Accounts – Trial Balance

Unit 3: SUBSIDIARY BOOKS **12 Hours**

Meaning – Significance – Types of Subsidiary Books – Purchases Book – Sales Book – Purchase Returns Book – Sales Return Book – Bills Receivable Book – Bills Payable Book – Cash Book (Simple Cash Book, Double Column Cash Book, Three Column Cash Book and Petty Cash Book) and Journal proper. Bank Reconciliation Statement – Preparation of Bank Reconciliation Statement

Unit 4: RECTIFICATION OF ERRORS **08 Hours**

Meaning – Kinds of Accounting Errors and Methods of Rectification of Errors – when suspense account is required and when suspense account is not required.

Unit 5: FINAL ACCOUNTS OF PROPRIETARY CONCERN **10 Hours**

Preparation of Trading Account, Profit & Loss Account and Balance Sheet.

Unit 6: SINGLE ENTRY SYSTEM **10 Hours**

Meaning – Features – Types – Merits – Demerits – Differences – Preparation of Opening Statement of Affairs, Closing Statement of Affairs, Computation of Profit/Loss and revised Statement of Affairs

SKILL DEVELOPMENT

- List out the accounting concepts and conventions.
- List out any ten errors disclosed by trial balance
- Collect the final accounts of a proprietary concern and present it vertical form.
- Prepare a Bank Reconciliation Statement with imaginary figures

BOOKS FOR REFERENCE

- 1) Dr. S.N. Maheswari, *Financial Accounting*
- 2) Jawaharlal & Seema Srivastava: *Financial Accounting, HPH*
- 3) BS Raman, *Financial Accounting*
- 4) Grewal and Gupta, *Advanced Accounting*
- 5) Dr. Anil Kumar, Dr. Rajesh Kumar, B. Mariyappa; *Financial Accounting*
- 6) S. P Jain and K. L. Narang ; *Financial Accounting*
- 7) R.G. Saha, *Fundamentals of Accounting*
- 8) S Jayapandian: *Financial Accounting from Zero,*

1.4 BUSINESS ORGANISATION AND ENVIRONMENT

OBJECTIVE

To familiarize the students with aspects of Business Organization and its Environment.

Unit 1: INTRODUCTION TO BUSINESS ORGANIZATION 10 Hours

Meaning of Business – Classification of Business Activities – Industry – Types of Industry – Commerce – Trade – Aids to Trade – Meaning – Advantages and Disadvantages

Unit 2: FORMS OF BUSINESS ORGANIZATION 15 Hours

Sole Proprietorship – Meaning – Characteristics – Advantages and Disadvantages. Partnership – Meaning – Characteristics – Advantages and Disadvantages - Types of Partners. Co-operative Society - Meaning – Characteristics – Types – Advantages and Disadvantages.

Unit 3: JOINT STOCK COMPANY 08 Hours

Meaning – Definition – Features – Types of Companies – Formation of a Company.

Unit 4: BUSINESS ENVIRONMENT 15 Hours

Meaning and Importance. Dimensions of Business Environment – Political, Economic, Social, Legal, Natural and Technological Environment.

Unit 5: GOVERNMENT AND BUSINESS 12 Hours

Meaning and Importance, Impact of Government policy on business and industry with reference to liberalization, privatization and globalization.

SKILL DEVELOPMENT

- Draw a Business Tree
- Prepare a Partnership deed
- Prepare Memorandum and Article of Association of any company
- Impact of Globalization on Indian Business and Industry
- State the impact of Technology on Indian Business

BOOKS FOR REFERENCE

- 1) Dr. Aswathappa: *Essentials of Business Environment*
- 2) Francis Cherrunilam : *Business Environment*
- 3) Dr. Ramachandra; *Business Environment*
- 4) Raj Agarwal – *Business Environment*
- 5) Vivek Mittall, – *Business Environment*

1.5 QUANTITATIVE METHODS FOR BUSINESS - I

OBJECTIVE

To provide basic knowledge of quantitative methods and their application to commercial situations and for decision making in business.

Unit 1: NUMBER SYSTEM

04 Hours

Introduction – Natural Numbers - Even Numbers – Odd Numbers – Integers – Prime Numbers – Rational & Irrational numbers, Real Numbers, HCF & LCM (Simple problems)

Unit 2: THEORY OF EQUATIONS

14 Hours

Introduction – Meaning – Types of Equations – Simple, Linear and Simultaneous Equations (only two variables) Eliminations and Substitution Method only. Quadratic Equation – Factorization and Formula Method ($ax^2 + bx + c = 0$ form only). Problems on Commercial Application.

Unit 3: PROGRESSIONS

12 Hours

Introduction – Arithmetic Progression - Finding the n^{th} term of an AP and Sum to n^{th} term of AP. Insertion of Arithmetic Means in given terms of AP and representation of AP. Geometric Progression – Finding n^{th} term of GP – Sum to n^{th} Term of GP – Insertion of Geometric Means in given Geometric Progression and also representation of GP.

Unit 4: MATRICES AND DETERMINANTS

15 Hours

Introduction, Meaning, types of matrices – operations of addition, subtraction, multiplication of two matrices – problems, transpose of a square matrix. Determinant of a square matrix- minor of an element, co-factor of an element of a determinant. adjoint of a square matrix, singular and non-singular matrices – inverse of a square matrix – Problems on linear equations in two variables using Cramer's rule.

Unit 5: COMMERCIAL ARITHMETIC

15 Hours

Simple interest, compound interest including half yearly and quarterly calculations, annuities Percentages, bills discounting, concepts of Ratios, duplicate-triplicate and sub-duplicate of a ratio. Proportions, third, fourth and inverse proportion - problems.

SKILL DEVELOPMENT

1. Calculation of future value of present value.
2. Calculation of geometric mean i.e, CAGR.
3. Calculation of EMI, Premium amount.

BOOKS FOR REFERENCE

- 1) A.Lenin Jothi : *financial Mathematics*
- 2) Saha: *Mathematics for Cost Accountants.*
- 3) Ranganath: *Business Mathematics*
- 4) G.R. Veena & Seema: *Business Mathematics and Statistics, I.K. Intl*
- 5) Dr. Sancheti & Kapoor: *Business Mathematics and Statistics.*
- 6) Zamarudeen: *Business Mathematics.*
- 7) Dikshit & Jain : *Business Mathematics*
- 8) R. Selvaraj, *Quantitative Methods in Management*

1.6 MARKET BEHAVIOUR AND COST ANALYSIS

Objective: to familiarize the students with the basic concepts of market forces and pricing decisions.

Unit 1: Market Forces

10 hrs

Demand: meaning, law of demand, nature of elasticity of demand, determinants of elasticity of demand, cost of advertisement and derived demand relations. Demand forecasting- meaning and methods (problems on trend projection by method least square). Supply- Law of supply, determinants of supply.

Unit 2: Cost and Profit Planning

14 hrs

Cost- meaning of short run and long run costs, fixed and variable costs, explicit and implicit costs, opportunity cost and incremental cost (concepts only). Total cost average cost and marginal cost behavior in short run and long run (including problems). CVP Analysis- BEP, BE Chart, margin of safety, P/V ratio, profit planning, make or buy decisions (including problems at alternative cost and sales).

Unit 3: Pricing practices and Strategies

12 hrs

Determinants of pricing policy, pricing methods- marginal cost pricing, target rate pricing, product line pricing, administered pricing, competitive bidding, dual pricing, transfer pricing. Price discrimination-requirements, types and dumping strategies. Pricing over product life cycle- skimmed pricing, penetration pricing, product -line pricing and price leadership.

Unit 4: Cost of capital and Capital budgeting

10 hrs

Meaning and types of capital, specific cost of capital; debt, preference shares and equity shares and weighted average cost of capital (concepts only). Capital budgeting- meaning and significance (problems on PB period and NPV methods only).

Unit 5: Firms and Decisions

14 hrs

Firm: meaning and goals, profit verses value (wealth) maximization dynamics (with time value of money), Decision making, decisions under market uncertainty situations, tactical verses strategic decisions and game theory. Linear programming and sensitivity analysis - basic assumptions, merits and demerits - simple problems.

SKILL DEVELOPMENT

1. Compute the BEP for a Business unit.
2. Calculate the cost of capital for a manufacturing unit.

References

1. P.L Mehta: *Managerial Economics*, Sultan Chand & Sons, New Delhi.
2. D.M. Mithani: *Managerial Economics*, Himalaya Publishing House, New Delhi.
3. R.L Varshney and K.L Maheshewari: *Managerial Economics*, Sultan Chand & Sons, New Delhi.
4. H.L Ahuja: *Business Economics*, S. Chand & Company Ltd., New Delhi.
5. Venugopal : *Economics for Business*, I.K. Intl.
6. Reddy & Appananiah: *Economics for Business*
7. K.M.Pandey & Others: *Economics for Managerial Decisions*
8. K.P.M Sundaram: *Micro Economics*, Sultan Chand & Sons, New Delhi.
9. M.L. Jhingan & J.K. Stephen: *Managerial Economics*, Vrinda Publishihing (P) Ltd. Delhi.
10. Manoj Kumar Mishra : *Managerial Economics*, Voyu Education of India, New Dehli.
11. Srivastava R.M. : *Financial Management - Management and Policy* ,HPH
12. Khan and Jain: *Financial Management*, Tata McGraw Hill Education Private Ltd., New Delhi
13. R.K. Sharma and S.K. Gupta: *Financial Management*, Kalyani Publications, Ludiana.
14. Atmananad, *Managerial Economics*

1.7 MANAGEMENT PROCESS

OBJECTIVES:

To familiarize the students with concepts and principles of Management

Unit 1: INTRODUCTION TO MANAGEMENT

10 Hours

Introduction - Meaning, nature and characteristics of Management - Scope and functional areas of management - Management as a science art or profession - Management & Administration - Principles of management - Social responsibility of management and Ethics.

Unit 2: PLANNING

08 Hours

Nature importance and purpose of planning - Planning process, Objectives - Types of plans (Meaning only) - Decision making - importance & steps.

Unit 3: ORGANIZING & STAFFING

14 Hours

Nature and purpose of organization, Principles of organization - Types of organization - Departmentation, Committees - Centralization Vs decentralization of authority and responsibility - Span of Control - MBO and MBE (Meaning only) - Nature and importance of staffing - Process of selection & recruitment (in brief).

Unit 4: DIRECTING

14 Hours

Meaning and nature of directing - Motivation theories (Maslow's, Herzberg, McGregors X & Y theory) - Communication meaning and importance, barriers to communication, types of communication - Coordination meaning and importance.

Unit 5: CONTROLLING

10 Hours

Meaning and steps in controlling - Essentials of a sound control system - Methods of establishing control (in brief).

SKILL DEVELOPMENT

- Different types of Organization Charts (structure).
- Chart on Staffing.
- Graphic representation of Maslow's Theory.
- Chart on Media of Communication.
- Chart on sources of recruitment.
- Draft Control chart for different industry / business groups.

BOOKS FOR REFERENCE

- 1) Koontz & O'Donnell, *Management*.
- 2) Appaniah & Reddy, *Management*.
- 3) T. Ramaswamy : *Principles of Management*
- 4) L M Prasad, *Principles of management*.
- 5) Karampal : *Management Process & Organisational Behaviour, I.K. Intl*
- 6) Rustom & Davan, *Principles and practice of Management*.
- 7) S V S Murthy, *Essentials of Management*.
- 8) Thomas. N. Duening & John. M. Ivan cevich, *Management, Principles and Guidelines, Biztantra Publications*.
- 9) Tripathi & Reddy, *Principles of Management*.
- 10) Kandepu : *Elements of Functional Administration*
- 11) Rekha & Vibha: *Business Management*
- 12) VSP Rao/Bajaj, *Management process and organization*.

2.3 FINANCIAL ACCOUNTING

OBJECTIVE

The objective of this course is to acquaint students with the accounting concepts, tools and Techniques influencing business organizations.

Unit 1: DEPARTMENTAL ACCOUNTS

13 Hours

Introduction – Meaning – Objectives – Apportionment of Revenue Items – Inter Departmental Transfers at Cost Price – At Selling Price – Preparation of Departmental Trading and Profit & Loss Account – General P&L Account – Balance Sheet.

Unit 2: INSURANCE CLAIMS

12 Hours

Introduction – Need – Loss of Stock Policy – Steps for ascertaining Fire insurance claim – Treatment of Salvage – Average Clause – Treatment of Abnormal Items – Computation of Fire insurance claims.

Unit 3: HIRE PURCHASE AND INSTALLMENT SYSTEMS

15 Hours

Introduction – Meaning – Hire Purchase Act 1972 – Important Definitions – Hire Purchase Agreement – Hire Purchase Price – Cash Price – Hire Purchase Charges – Net Hire Purchase Price – Net Cash Price – Calculation of Interest – Calculation of Cash Price – Journal Entries and Ledger Accounts in the books of Hire Purchaser and Hire Vendor. Installment System – Meaning – Features – Differences between Hire Purchase System and Installment Purchase System

Unit 4: ROYALTY ACCOUNTS

15 Hours

Introduction – Meaning – Technical Terms – Royalty – Landlord – Tenant – Minimum Rent – Short Workings – Recoupment of Short Working under Fixed Period – Floating Period – Recoupment within the Life of a Lease – Treatment of Strike and Stoppage of work – Accounting Treatment in the books of Lessee – Preparation of Ledger Accounts – Royalty Account – Landlord Account – Short Workings Account – Minimum Rent Account when Minimum Rent Account is required.

Unit 5: SALE OF PARTNERSHIP TO A LIMITED COMPANY

15 Hours

Introduction – Need for conversion – Meaning of Purchase Consideration – Mode of Discharge of Purchase Consideration – Method of calculation of Purchase Consideration – Net Payment Method – Net Asset Method – Passing of Journal Entries and Preparation of Ledger Accounts in the books of Vendor – Treatment of certain items – Dissolution Expenses – Unrecorded Assets and Liabilities – Assets and Liabilities not taken over by the Purchasing Company – Contingent liabilities – Non-assumption of trade liabilities – In the books of Purchasing Company – Passing of Incorporation entries.

SKILL DEVELOPMENT

- problems on calculation of purchase consideration when a firm is converted into a limited company
- Computation of cash price, interest components and hire purchase installments taking any problem
- Understand the meaning and purpose of loss of stock insurance including the average clause
- A problem on royalty highlighting the significance of minimum rent and recoupment of short workings

BOOKS FOR REFERENCE

- 1) M.A.Arunachalam & K.S.Raman: *Advanced Accountancy*
- 2) B.S. Raman, *Advanced Accountancy Vol II*
- 3) Shukla and Grewal, *Advanced Accountancy*
- 4) Gupta and Radhaswamy, *Advanced Accountancy Vol I & II*
- 5) Agarwal and Jain, *Advanced financial Accounting*
- 6) Guruprasad Murthy : *Financial Accounting*
- 7) Maheshwari, *Advanced Accountancy Vol I & II*
- 8) B.M. Lall Nigam & G.L. Sharma, *Advanced Accountancy*
- 9) S.N. Maheshwari & S.K. Maheshwari, *Financial Accounting*
- 10) Jain S.P & Narang K.L, *Basic Financial Accounting*
- 11) S. Anil Kumar, Mariappa & V. Rajesh Kumar, *Financial Accounting*
- 12) V.K. Goyal, *Financial Accounting 2nd Edition*

2.4 QUANTITATIVE METHODS FOR BUSINESS - II

OBJECTIVE

To provide basic knowledge of quantitative methods and their application to commercial situations for decision making in business.

Unit 1: INTRODUCTION TO STATISTICS 04 Hours

Background and Basic concepts: Classification and Tabulation of Data, Introduction – Definition of Statistics – Functions – Scope – Limitations.

Unit 2: MEASURES OF CENTRAL TENDENCY 14 Hours

Introduction – Types of averages – Arithmetic Mean (Simple and Weighted) – Median – Mode – Graphs – Histogram and Ogive Curves.

Unit 3: MEASURE OF DISPERSION 12 Hours

Introduction – Meaning & Definition – Methods of dispersion – Range – Quartile Deviation – Mean Deviation – Standard Deviation and Coefficient of Variation.

Unit 4: CORRELATION AND REGRESSION ANALYSIS 10 Hours

Correlation – Meaning & Definition - Uses – Types – Probable error – Karl Pearson's & Spearman's Rank Correlation (Excluding bivariate and Multi correlation).
Regression – Meaning and Definition, Regression Equations - Problems.

Unit 5: INDEX NUMBERS 10 Hours

Meaning & Definition – uses – Classification – Construction of Index Numbers – Methods of constructing Index Numbers – Simple Aggregative Method – Simple Average of Price Relative Method – Weighted index method – Fisher's Ideal method including Time and Factor Reversibility tests – Consumer Price Index – Problems

Unit 6: TIME SERIES 10 Hours

Introduction – Meaning and Definition – Uses – Components of Time Series – Computation of Trend Values – Moving Averages Method and Method of Least Squares.

SKILL DEVELOPMENT

- Collect the age statistics of 10 married couples and compute correlation coefficient.
- Collect the age statistics of 10 newly married couples and compute regression equations. Estimate the age of bride when age of bridegroom is given.
- Select 10 items of daily-consumed products and collect base year quantity, base year price and current year price. Calculate cost of living index.
- Collect the turnover of a company for 7 years and predict the sales of 8th year by using method of least square.

BOOKS FOR REFERENCE

- 1) S P GUPTA: *Statistical Methods*- Sultan Chand, Delhi
- 2) C.R.reddy : *Quantitative Techniques for Management Decisions*
- 3) Dr. B N GUPTA: *Statistics (Sahitya Bhavan)*, Agra.
- 4) Veerchamy : *Operation Research I.K. International Publishers*
- 5) S C GUPTA: *Business Statistics, Himalaya Publications.*
- 6) ELLAHANCE : *Statistical Methods*
- 7) SANCHETHI AND KAPOOR: *Business Mathematics*
- 8) R.S Bhardwaj: *Business Statistics*
- 9) C.S Mujawar : *Statistics for Managers I.K. International Publishers*

2.5 ORGANISATIONAL BEHAVIOUR

OBJECTIVE: To enable the students to understand the Organizational Behavior and Organizational Change.

Unit 1: ORGANIZATIONAL BEHAVIOUR 04 Hours

Organization - Meaning and significance - The study of organization behaviour - Definition - Scope and Application in Management - Contributions of other disciplines - Organizational structure, challenges facing management, Emerging Organizations.

Unit 2: PERCEPTION AND ATTITUDES 10 Hours

Meaning - Need - Perceptual Process - Perceptual Mechanism - Factors influencing perception - Interpersonal perception.

Meaning - Characteristics of Attitudes - Components of Attitude - Attitude and Behaviour - Attitude formation and Measurement of Attitudes

Unit 3: LEARNING AND BEHAVIOUR MODIFICATION 06 Hours

Principles of learning & Reinforcement - observational learning - Cognitive Learning - Organizational Behaviour Modification - Steps in Organizational Behaviour Modification process - Organizational Reward Systems

Unit 4: PERSONALITY 06 Hours

Determinants of Personality - Biological factors - Cultural factors - family and Social Factors - Situational factors - Personality attributes influencing OB, Interactive Behaviour and Interpersonal Conflict.

Unit 5: GROUP DYNAMICS & LEADERSHIP 12 Hours

Meaning - Types of Groups - Functions of small groups - Group Size Status - Managerial Implications - Group Behaviour - Group Norms - Cohesiveness - Group Think, Formal and Informal Leadership Characteristics Leadership Styles - Autocratic / Dictatorial - Democratic / Participative, Free reign/Laissez faire Leadership Styles & Management Activities, Interpersonal Communication.

Unit 6: ORGANIZATIONAL CHANGE 12 Hours

Meaning - Nature of work change - Pressure for change - Change process - Types of change - Factors influencing change - resistance to change - overcoming resistance - Organizational Development - different techniques.

SKILL DEVELOPMENT

- Meaning of job enrichment and list the reconcilements of job enrichments
- Characteristics of attitudes and components of attitudes - A brief explanation
- List the determinants of personality

- Factors influencing perceptions – A brief explanation
- List the characteristics of various leadership styles.

BOOKS FOR REFERENCE

- 1) Robbins, *Organizational Behaviour*
- 2) John W. Newstrom & Keith Davis, *Organizational Behaviour*
- 3) Fred Luthans, *Organizational Behaviour*
- 4) K. Aswathappa, *Organizational Behaviour*
- 5) M. Gangadhar, V.S.P.Rao and P.S.Narayan, *Organizational Behaviour*
- 6) M.N.Mishra: *Organisational Behaviour and Corporate Development*
- 7) Karamapl : *Business Management & Organizational Behavioral* I.K. International publi
- 8) N.S. Gupta, *Organizational Behaviour*
- 9) Jit. S. Chandan, *Organisational Behaviour*
- 10) Sharma R.K & Gupta S.K, *Management and Behaviour Process.*
- 11) Appanniah &, *Management and Behavioural Process.*
- 12) P.G. Aquinas *Organizational Behavior*

2.6 PRODUCTION AND OPERATIONS MANAGEMENT

Objective

The objective of the course is to make the students to understand the concepts of production and operations management of an industrial undertaking and the benefits of automation.

Unit 1: INTRODUCTION TO PRODUCTION AND OPERATIONS MANAGEMENT

11 Hours

Introduction - Meaning & Definition - Classification - Objectives and scope of Production and operation Management - Objectives of Operations Management - Scope of Production and Operations management. Automation: Introduction - Meaning and Definition - Need - Types - advantages and Disadvantages.

Unit 2: PLANT LOCATION AND LAYOUT

08 Hours

Introduction - Meaning & Definition - Factor affecting location, theory and practices, cost factor in location - plant layout principles - space requirement, Different types of facilities, Organization of physical facilities - building, sanitation, lighting, air conditioning and safety.

Unit 3: MATERIALS MANAGEMENT

10 Hours

Introduction - Meaning & Definition - Purchasing, selection of suppliers, inventory management, material handling principles and practices, economic consideration, criteria for selection of materials handling equipment, standardization, codifications, simplification, inventory control, Techniques of inventory control - Value analysis, value engineering - Human engineering - Inter- relationship of plant layout and materials handling, SCM

Unit 4: PRODUCTION PLANNING AND QUALITY CONTROL

10 Hours

Objectives and concepts, capacity planning, corresponding production planning, controlling, scheduling routing - Quality Control - Statistical quality control, Quality management, Control charts and operating characteristic curves, acceptance sampling procedures, quality circle, Meaning of ISO and TQM.

Unit 5: TIME AND MOTION STUDY

08 Hours

Introduction - Productivity - factors influencing productivity - Concept of Standard Time, Method study, time and motion study, charts and diagrams, work measurements.

Unit 6: MAINTENANCE AND WASTE MANAGEMENT

10 Hours

Introduction – Meaning – Objectives - Types of maintenance, Break down, spares planning and control, preventive routine, relative advantages, maintenance scheduling, equipment reliability and modern scientific maintenance methods - Waste Management - Scrap and surplus disposal, salvage and recovery.

SKILL DEVELOPMENT

1. Visit any industry and list out the stages of PPC with as many details as possible.
2. List out the Functions of Materials management in an organization
3. Describe the Functions of Quality Circles in an industry
4. Draw a ISO specification chart
5. Visit a company and List out Environmental issues.
6. Visit a company and draw a chart on Plant layout.

BOOKS FOR REFERENCE

- 1) *SN Chary, Production & Operations Management*
- 2) *Ashwathappa. K & Sridhar Bhatt : Production & Operations Management*
- 3) *Alan Muhlemann, John Oaclank and Keith Lockyn, Production & Operations Management*
- 4) *K K Ahuja, Production Management*
- 5) *S.A.Chunawalla & Patel: Production & Operations Management*
- 6) *Everett E Adam Jr., and Ronald J Ebert, Production & Operations Management*
- 7) *Dr. L. N. Agarwal and Dr. K.C. Jain, Production Management*
- 8) *Thomas E. Morton, Production Operations Management*
- 9) *Gondhalekar & Salunkhe : Productivity Techniques*
- 10) *U. Kachru, Production & Operations Management*

3.2 SOFT SKILLS FOR BUSINESS

OBJECTIVE: *To develop both Oral and written communication skill concerning organizational and Busies issues*

Unit 1: ELEMENTS OF COMMUNICATION

06 Hours

Meaning, Importance, objectives & Principles of Communication, types and forms of communication, Process, impediments of effective communication, strategies for effective communication.

Unit 2: NONVERBAL COMMUNICATION

10 Hours

Body Language, Gestures, Postures, Facial Expressions, Dress codes, The Cross Cultural Dimensions of Business Communication, Listening & Speaking, Techniques of Eliciting Response, Probing Questions, Observation, Business and social etiquettes.

Unit 3: PUBLIC SPEAKING – IMPORTANCE OF PUBLIC SPEAKING SPEECH COMPOSITION

10 Hours

Principles of Effective Speech & Presentations. Technical speeches & Non-technical presentations. Speech of introduction of a speaker - speech of vote of thanks -occasional speech - theme speech. Moderating programs Use of Technology

Unit 4: INTERVIEW TECHNIQUES

08 Hours

Importance of Interviews, Art of conducting and giving interviews, Placement interviews - discipline interviews - appraisal interviews – exit interviews.

Unit 5: MEETINGS**06 Hours**

Importance, Meetings opening and closing Meetings Participating and Conducting Group discussions. Brain Storming , E- Meetings

Unit 6: BUSINESS COMMUNICATION**10 Hours**

Business letters: Inquiries, Circulars, Quotations, Orders, Acknowledgments Executions, Complaints, Claims & adjustments, Collection letter, Banking correspondence, Agency correspondence, Bad news and persuading letters, Sales letters, Job application letters - Bio-data, Covering Letter, Interview Letters, Letter of Reference. Memos, minutes, Circulars & notices.

Unit 7: CARRIER PLANNING

Awareness of different carries sources of information, choosing a carrier, carrier counseling, and Resume preparation preparing for group discussion

SKILL DEVELOPMENT

1. Conduct a mock meeting and draft minutes of the meeting.
2. Draft a letter of enquiry to purchase a laptop.
3. Draft your bio-data.

BOOKS FOR REFERENCE

- 1) *Soft Skills of Personality Development: C.G.G Krishnamacharyulu & Lalitha*
- 2) *Lesikar, R.V. & Flatley, M.E. (2005). Basic Business Communication Skills for Empowering the Internet Generation. Tata McGraw Hill Publishing Company Ltd. New Delhi.*
- 3) *Rai & Rai: Business Communication Himalaya Publishing House*
- 4) *Ludlow, R. & Panton, F. (1998). The Essence of Effective Communications. Prentice Hall of India Pvt. Ltd.*
- 5) *M.S. Rao : Soft Skills – Enhancing Employability I.K. International*
- 6) *Rao & Das : Communication Skills*
- 7) *Adair, J. (2003). Effective Communication. Pan Mcmillan.*
- 8) *Thill, J. V. & Bovee, G. L. (1993). Excellence in Business Communication. McGrawHill, New York.*
- 9) *Bowman, J.P. & Branchaw, P.P. (1987). Business Communications: From Process to Product. Dryden Press, Chicago.*
- 10) *Sharma S.P. & Others, Business Communication*
- 11) *Rajkumar, Basic of Business Communication*
- 12) *Banerjee : Soft Skills Business and Professional Communication, I.K. International*

3.3 CORPORATE ACCOUNTING

OBJECTIVE

The objective of this course is to enable the students to have a comprehensive awareness about the provisions of the company's act and corporate accounts.

Unit 1: COMPANY FINAL ACCOUNTS

20 Hours

Statutory Provisions regarding preparation of Company Final Accounts – Treatment of Special Items – Managerial Remuneration – Tax deducted at source – Advance payment of Tax – Provision for Tax – Depreciation – Interest on debentures – Dividends – Rules regarding payment of dividends – Transfer to Reserves – Preparation of Profit and Loss Account and Balance Sheet as per Section 219(1)(b)(IV) and form 23AB. Abridged Profit and Loss Account – Abridged Balance Sheet (Vertical Form).

Unit 2: ISSUE OF SHARES

10 Hours

Meaning of Share, Types of Shares – Preference share and equity shares – Issue of Shares at Apr, at Premium, at Discount, Pro – Rate Allotment – Journal Entries – And Bank Accounts – Balance Sheet

Unit 3: UNDERWRITING OF SHARES

10 Hours

Meaning – Terms used in Underwriting – Underwriter – Marked Applications – Unmarked Applications – Partial Underwriting – Complete Underwriting – Pure Underwriting – Firm Underwriting – Underwriting Commission – Determination of Net Liability and Total Liability.

Unit 4: VALUATION OF GOODWILL

10 Hours

Meaning – Circumstances of Valuation of Goodwill – Factors influencing the value of Goodwill – Methods of Valuation of Goodwill - Average Profit Method – Super Profit Method – Capitalization of Super Profit Method – Annuity Method – Capitalization of Profit Method.

Unit 5: VALUATION OF SHARES

10 Hours

Meaning – Need for Valuation – Factors Affecting Valuation – Methods of Valuation – Asset Backing or Intrinsic Value Method – Yield Method – Earning Capacity Method – Fair Value Method – Rights Issue and Valuation of Rights Issue.

SKILL DEVELOPMENT

- Collect and fill the share application form of a limited Company.
- Collect a Prospectus of a company and identify the reasons to invest or not to invest in shares.
- List the various functions of Underwriters.
- Collect annual report of a Company and List out its assets and Liabilities.
- Collection of latest final accounts of a company and find out the net Asset value of shares
- List out the conditions to be fulfilled for redemption of Preference shares.

BOOKS FOR REFERENCE

- 1) M.A.Arunachalam & K.S.Raman: Corporate Accounting - II
- 2) Dr. S.N. Maheswari, Financial Accounting.
- 3) Dr. Anilkumar, Dr. Rajesh Kumar and B Mariyappa – Corporate Accounting – I
- 4) S. P. Jain and K. L. Narang – Corporate Accounting
- 5) SP Iyengar, Advanced Accountancy.
- 6) R L Gupta, Advanced Accountancy.
- 7) V.K. Goyal: Corporate Accounting.

3.4 HUMAN RESOURCE MANAGEMENT

OBJECTIVE

To familiarize the students with concepts and principles of Human Resource Management.

Unit 1: HUMAN RESOURCE MANAGEMENT

10 Hours

Introduction – Meaning of HRM – Objectives of HRM – Importance of HRM – Functions and Process of HRM – HR Manager Duties and Responsibilities – Recent trends in HRM.

Unit 2: HUMAN RESOURCE PLANNING, RECRUITMENT & SELECTION 15 Hours

Meaning – Importance of Human Resource Planning – Benefits of Human Resource Planning. Recruitment – Meaning – Methods of Recruitment. Selection – Meaning – Steps in Selection Process – Problems Involved in Placement.

Unit 3: TRAINING AND INDUCTION

10 Hours

Meaning of Training and Induction, Objective and purpose of induction, Need for training, benefits of training, Identification of training needs and methods of training.

Unit 4: PERFORMANCE APPRAISAL AND COMPENSATION

10 Hours

Introduction – Meaning and Definition – Objectives – Methods of Performance Appraisal – Uses and Limitations of Performance Appraisal. Compensation – Meaning of Compensation – Objectives of Compensation.

Unit 5: PROMOTION AND TRANSFERS

10 Hours

Meaning and Definition of Promotion - Purpose of promotion, basis of promotion, Meaning of transfer, reasons for transfer, types of transfer, right sizing of work force. Need for right sizing.

Unit 6: HUMAN RESOURCE DEVELOPMENT

05 Hours

Meaning of HRD, Role of training in HRD. Knowledge management, Knowledge resources, Impact of globalization on human resource management, problems in relation to Transnational and multinationals.

SKILL DEVELOPMENT

- Prepare a Chart showing the functions of HRM and a brief explanation on the need for each function.
- Prepare an Advertisement for recruitment / selection of candidates for any organization of your choice.
- Give observation of industrial safety practices followed by any organization of your choice.
- Develop a format for performance appraisal of an employee.
- Choose any MNC and present your observations on training programme.

BOOKS FOR REFERENCE

- 1) C.B.Mamoria, *Personnel management*
- 2) Edwin Flippo, *Personnel management*
- 3) Aswathappa, *Human Resource Management*
- 4) Subba Rao, *Personnel and Human Resources management*
- 5) S.sadri & Others: *Geometry of HR*
- 6) Rajkumar : *Human Resource Management I.K. Intl*
- 7) Michael Porter, *HRM and human Relations*
- 8) Biswanath Ghosh, *Human Resource Development and Management.*
- 9) Reddy & Appanniah, *Human Resource Management.*
- 10) Rekha & Raghu , *Human Resource Management*
- 11) Madhurima lall, *Human Resource Management*

3.5 SERVICES MANAGEMENT

OBJECTIVE

To familiarize the students with different services and prepare them with requisite skills to manage.

Unit 1: INTRODUCTION TO SERVICES MANAGEMENT

10 Hours

Meaning of Services – Concepts - Characteristics of Services – Classification of Services – Marketing mix in service industry– Growth of Service Sector – Service processes – Building Customer Loyalty - Managing the Service Sector.

Unit 2: TOURISM AND TRAVEL SERVICES

10 Hours

Introduction – Evolution of Tourism industry – Concept and Nature of Tourism – Significance of Tourism Industry- Market segmentation in tourism- Marketing mix of Tourism - Recent Trends in Tourism and Travel Services.

Unit 3: BANKING AND INSURANCE SERVICES

10 Hours

Banking - Introduction – Traditional Services – Modern Services – Recent Trends in Banking Services. Insurance - Introduction – Meaning and Definition of Insurance – Types of Insurance – Life Insurance – Products of Life Insurance – General Insurance – Types of General Insurance.

Unit 4: FINANCE AND MARKETING SERVICES

15 Hours

Financial services – meaning - features – importance – contribution of financial services in promoting industry – Financial instruments – types – Mutual Funds – factoring – Leasing – Venture Capital. Marketing Services – Meaning – features – importance - Contribution of Marketing Services in promoting industry and impact on growth of economy - customer service; types of marketing services.

Unit 5: HEALTHCARE AND EDUCATIONAL SERVICES

15 Hours

Hospitals – Evolution of Hospital Industry – Nature of Service – Risk involved in Healthcare Services – marketing of medical services – Hospital extension services – Pharmacy, nursing – medical Transcription . Educational services - A brief insight into Indian Education System – Issues in Education – Modern Trends in Education Service.

SKILL DEVELOPMENT

- Prepare a chart on conditions to be complied for Star Hotel Status.
- Procure any two insurance policies (Xerox) and paste them in the record.
- Visit and Travel and Tour agencies and prepare organization chart.
- Interact with tourist operators and identify the areas of tourism management.
- Prepare a chart showing customer service rendered by at least two MF. (Preferably a comparative chart)
- Procedures of Railway ticket booking with specimen of reservation/cancellation slip.
- Procedure for Air ticket booking both domestic and International.

BOOKS FOR REFERENCE

- 1) S.M.Jha: *Services Marketing* HPH
- 2) Shanker, Ravi; *Services Marketing – the Indian Perspective*; Excel Books, New Delhi; First Edition; 2002
- 3) Dr. Ramachandra, Dr. Chandra Shekar ; *Services Management*
- 4) Dr. Shajahan. S; *Service Marketing (Concept, Practices & Cases)*; Himalaya Publishing House; Mumbai; First Edition 2001.
- 5) Dutta : *Service Management*, I.K. International
- 6) Venugopal, Vasanthi & Raghu V.N; *Services Marketing*; Himalaya Publishing house; Mumbai; First Edition 2001.
- 7) Cengiz Haksever et al – '*Service Management and Operations*'; Pearson Education.
- 8) Usha Devi & Others , *Services Management*

3.6 CORPORATE ENVIRONMENT

OBJECTIVE

To enable the students to get familiarized with the existing Company Law and Secretarial Procedure.

Unit 1: FORMATION OF COMPANY

15 Hours

Promotion of Company – Promotion – Incorporation – Capital Subscription and Certificate of Commencement of Business. Memorandum of Association – Definition – Clauses. Articles of Association – Definition – Contents – Distinction between Memorandum of Association and Articles of Association – Alteration of Memorandum of Association and Articles of Association. Prospectus – Meaning – Contents – Statement in Lieu of Prospectus.

Unit 2: CAPITAL OF COMPANY

10 Hours

Share Capital – Meaning of Shares – Kinds of Share – Merits and Demerits of Shares. Debentures – Meaning – Features – Types – Merits and Demerits, Listing of Shares.

Unit 3: COMPANY MEETINGS

12 Hours

Meaning and Definition – Types of Meeting – Statutory Meeting – Annual General Meeting – Extraordinary General Meeting – Board Meeting and Resolutions.

Unit 4: COMPANY SECRETARY

13 Hours

Meaning and Definition – Position – Appointment – Rights – Duties – Liabilities – Qualification and Removal of Company Secretary.

Unit 5: WINDING UP OF COMPANIES

10 Hours

Modes of winding up – commencement of winding up – consequences – official liquidator – powers and duties of liquidator.

SKILL DEVELOPMENT

- Drafting of Memorandum of Association, Drafting of Articles of Association.
- Drafting Notice of Company Meetings – Annual, Special, Extraordinary and Board meetings.
- Drafting Resolutions of various meetings – different types.
- Chart showing Company's Organization Structure.
- Chart showing different types of Companies.

BOOKS FOR REFERENCE

- 1) Maheshwari & Maheshwari : Elements of Corporate Laws
- 2) M.C. Shukla & Gulshan: Principles of Company Law.
- 3) N.D. Kapoor: Company Law and Secretarial Practice.
- 4) K.Ramchandra & Others : Legal System in Business
- 5) M.C. Bhandari: Guide to Company Law Procedures.
- 6) S.C. Kuchal: Company Law and Secretarial Practice.
- 7) Dr. P.N. Reddy and H.R. Appanaiah: Essentials of Company Law and Secretarial Practice, Himalaya Publishers.
- 8) S.S Gulshan: Company Law
- 9) C.L. Bansal: Business & Corporate law

3.7 COMPUTER FUNDAMENTALS

OBJECTIVES

To provide basic knowledge of Computer and its Usage.

Unit 1: INTRODUCTION TO COMPUTERS

10 Hours

General features of a Computer – Generation of Computers – Personal Computer – Workstation – Mainframe Computer and Super Computers. Computer Applications – Data Processing – Information Processing – Commercial – Office Automation – Industry and Engineering – Healthcare – Education – Graphics and Multimedia.

Unit 2: COMPUTER ORGANIZATION

10 Hours

Central Processing Unit – Computer Memory – Primary Memory – Secondary Memory – Secondary Storage Devices – Magnetic and Optical Media – Input and Output Units – OMR – OCR – MICR – Scanner – Mouse – Modem.

Unit 3: COMPUTER HARDWARE AND SOFTWARE

15 Hours

Machine language and high level language – Application software – Computer program – Operating system – Computer virus, antivirus and Computer security – Elements of MS DOS and Windows OS – Computer arithmetic – Binary, octal and hexadecimal number systems – Algorithm and flowcharts – Illustrations – Elements of database and its applications.

Unit 4: MICROSOFT OFFICE

13 Hours

Word processing and electronic spread sheet – An overview of MS WORD, MS EXCEL and MS POWERPOINT – Elements of BASIC programming – Simple illustrations.

Unit 5: COMPUTER NETWORKS

12 Hours

Types of networks – LAN, Intranet and Internet – Internet applications – World wide web – E-mail, browsing and searching – Search engines – Multimedia applications.

LIST OF PRACTICAL ASSIGNMENTS: (12 Sessions of 2 hours each)

- System use, keyboard, mouse operations. Word pad and paint brush.
- Creating a folder and saving a document – 2 sessions.
- Simple MS. DOS commands – 1 Session
- Windows operating system – icons, menus and submenus, my computer – 2 sessions
- Desktop publishing – preparation of a document using MS.WORD – 2 sessions
- Installation of software, virus scanning – illustrations – 1 session.
- Spreadsheet calculations using MS.EXCEL – 1 session.
- BASIC programming – illustrations – 1 session.
- Internet use. Surfing, browsing, search engines, E-mail. – 2 sessions.

BOOKS FOR REFERENCE

- 1) Alexis Leon and Mathews Leon (1999): *Fundamentals of information technology*, Leon Techworld Pub.
- 2) Jain, S.K. (1999): *Information Technology "O" level made simple*, BPB Pub.
- 3) Jain, V.K. (2000): *"O" Level Personal Computer Software*, BPB Pub.
- 4) Sharma Dhiraj: *Information Technology for Business* HPH
- 5) Archanakumar : *Computer Basics with Office automation* I.K. International
- 6) Rajaraman, V. (1999): *Fundamentals of Computers*, Prentice Hall India.
- 7) Hamacher, *Computer Organisation*, Mc Graw.
- 8) Sinha, *Computer Fundamentals*, BPB Pub.
- 9) Saha & Saha : *Computer Fundamentals*
- 10) D. Bharihoke, *Fundamental of Information Technology*.

4.2 BUSINESS RESEARCH METHODS

OBJECTIVE

To create an awareness of the Process of Research, the tools and techniques of research and generation of reports

Unit 1: INTRODUCTION TO RESEARCH

15 Hours

Meaning – Objectives – Types of Research – Scope of Research – Research Approaches – Research Process – Research Design – Research Methods Vs Research Methodology - Steps in Research – Problem Formulation – Statement of Research Objective – Exploratory – Descriptive – Experimental Research.

Unit 2: METHODS OF DATA COLLECTION

08 Hours

Observational and Survey Methods – Field Work Plan - Administration of surveys - Training field investigators - Sampling methods - Sample size.

Unit 3: TOOLS FOR COLLECTION OF DATA

08 Hours

Questionnaire Design; Attitude measurement techniques – Motivational Research Techniques – Selection of Appropriate Statistical Techniques

Unit 4: STATISTICAL METHODS

16 Hours

Tabulation of data - Analysis of data – drawing Testing of Hypothesis, Advanced techniques – ANOVA, Chi-Square - Discriminant Analysis - Factor analysis Conjoint analysis - Multidimensional Scaling - Cluster Analysis (Concepts Only).

Unit 5: REPORT WRITING

08 Hours

Types of Reports, Business, Technical and Academic Report writing – Methodology Procedure – Contents – Bibliography

SKILL DEVELOPMENT

- Illustrate different types of samples with examples
- Construct a questionnaire for collection of primary data keeping in mind the topic chosen for research
- Narrate your experience using observation technique
- Diagrammatically present the information collected through the questionnaire

BOOKS FOR REFERENCE

- 1) O.R.Krishnaswamy; *Research methodology in Social Sciences*, HPH, 2008.
- 2) R. Divivedi: *Research Methods in Behavior Science*, Macmillan India Ltd., 2001.
- 3) J.K. Sachdeva: *Business Research Methodology* HPH
- 4) Levin & Rubin: *Statistics for Management*, Prentice Hall of India, 2002
- 5) Gupta S; *Research Methodology and Statistical Techniques*, Deep & Deep Publication (P) Ltd., 2002
- 6) Thakur D: *Research Methodology in Social Sciences*, Deep & Deep Publications (P) Ltd.,1998.
- 7) Tripathi P.C: *A Textbook of Research Methodology*, Sultan Chand & Sons, 2002.
- 8) Cooper: *Business Research Methods* 6th edition, MC Graw Hill,
- 9) C.R. Kothari, *Research Methodology*, Vikas Publications
- 10) S.N. Murthy, V. Bhojanna: *Business Research Methods Excel Books*

4.3 MARKETING MANAGEMENT

OBJECTIVE

To enable students to understand the concept of marketing and its applications and also recent trends in Marketing.

Unit 1: INTRODUCTION TO MARKETING

10 Hours

Meaning & Definition – Goals – Concepts of Marketing – Approaches to Marketing – Functions of Marketing.

Unit 2: MARKETING ENVIRONMENT (MACRO)

10 Hours

Meaning – Demographic – Economic – Natural – Technological – Political – Legal – Socio - Cultural Environment

Unit 3: MARKETING MIX

20 Hours

Meaning – Elements – Product – Product Mix – Product Line – Product Lifecycle – Product Planning – New Product Development – Failure of New Product – Branding – Packing and Packaging. Pricing – Objectives – Factors influencing Pricing Policy and Methods of Pricing. Physical Distribution – Meaning – Factors affecting Channel Selection – Types of Marketing Channels. Promotion – Meaning and Significance of Promotion – Personal Selling & Advertising.

Unit 4: MARKET SEGMENTATION AND CONSUMER BEHAVIOUR

10 Hours

Meaning & Definition – Bases of Market Segmentation – Requisites of Sound Market Segmentation. Consumer Behaviour – Factors influencing Consumer Behaviour and Buying Decision Process.

Unit 5: CUSTOMER RELATIONSHIP MANAGEMENT

05 Hours

Meaning and Definition – Role of CRM – Advantages and Disadvantages

Unit 6: RECENT TRENDS IN MARKETING

05 Hours

Introduction, E-business – Tele-marketing – M-Business – Green Marketing – Relationship Marketing – Retailing – Concept Marketing and Virtual Marketing.

SKILL DEVELOPMENT

- Identify the producer of your choice and describe in which stage of the product life cycle it is positioned.
- Suggest strategies for development of a product.
- Study of Consumer Behaviour for a product of your choice.
- Develop an Advertisement copy for a product.
- Prepare a chart for distribution network for different products.

BOOKS FOR REFERENCE

- 1) Philip Kotler - Marketing Management
- 2) Bose Biplab: Marketing Management
- 3) J.C. Gandhi - Marketing Management
- 4) Ramesh & Jayanti Prasad: Marketing Management, I.K. International
- 5) Dr. Ramachandra, Dr. Chandra Shekar, Marketing management .
- 6) Stanton W.J. etzal Michael & Walker, Fundamentals of Management.
- 7) P N Reddy & Appanniah, Marketing Management.
- 8) Sontakki, Marketing Management.
- 9) Vibha & Rekha , Marketing Management
- 10) Bholanath Datta: Marketing management 2nd Edition

4.4 FINANCIAL MANAGEMENT

OBJECTIVE

To enable students to understand the basic concepts of financial management and the role of financial management in decision-making.

Unit 1: INTRODUCTION TO FINANCIAL MANAGEMENT **10 Hours**

Introduction – Meaning of Finance – Business Finance – Finance Function – Aims of Finance Function – Organization structure of finance - Financial Management – Goals of Financial Management – Financial Decisions – Role of a Financial Manager – Financial Planning – Steps in Financial Planning – Principles of a Sound Financial Planning.

Unit 2: TIME VALUE OF MONEY **10 Hours**

Introduction – Meaning & Definition – Need – Future Value (Single Flow – Uneven Flow & Annuity) – Present Value (Single Flow – Uneven Flow & Annuity)– Doubling Period – Concept of Valuation – Valuation of Bonds & Debentures – Preference Shares – Equity Shares – Simple Problems.

Unit 3: FINANCING DECISION **10 Hours**

Introduction – Meaning of Capital Structure – Factors influencing Capital Structure – Optimum Capital Structure – EBIT – EBT – EPS – Analysis – Leverages – Types of Leverages – Simple Problems.

Unit 4: INVESTMENT DECISION **10 Hours**

Introduction – Meaning and Definition of Capital Budgeting – Features – Significance – Process – Techniques – Payback Period – Accounting Rate of Return – Net Present Value – Internal Rate of Return – Profitability Index - Simple Problems.

Unit 5: DIVIDEND DECISION **08 Hours**

Introduction – Meaning and Definition – Determinants of Dividend Policy – Types of Dividends – Types of Dividend Policies in India.

Unit 6: WORKING CAPITAL MANAGEMENT **12 Hours**

Introduction – Concept of Working Capital – Significance of Adequate Working Capital – Evils of Excess or Inadequate Working Capital – Determinants of Working Capital – Sources of Working Capital –Cash Management – Receivables Management – Inventory Management. Working capital finance.

SKILL DEVELOPMENT

- Draw the organization chart of Finance Function
- Illustrate operating cycle for at least 2 companies of your choice.
- Evaluate the NPV of an investment made in any one of the capital projects with imaginary figures for 5 years.
- Prepare an aging schedule of debtors with imaginary figures.
- Capital structure analysis of companies in different industries

BOOKS FOR REFERENCE

- 1) S N Maheshwari, *Financial Management*.
- 2) R.M.Srivastava : *Financial Management –Management and Policy*
- 3) Khan and Jain, *Financial Management*.
- 4) Sharma and Sashi Gupta, *Financial Management*.
- 5) M.Gangadhar Rao & Others: *Financial Management*
- 6) I M Pandey, *Financial Management*
- 7) Reddy, Appananih: *Financial Management*.
- 8) Dr. Ramachandra, Dr. Chandrashekar, *Financial Management*.
- 9) Prasanna Chandra, *Financial Management*.
- 10)Sudhindra Bhatt: *Financial Management*.

BOOK REFERENCE

- 1) N.D. Kapoor, *Business Laws*, Sultan chand publications.
- 2) K.R. Bulchandni: *Business Laws*,
- 3) S.C. Sharama & Monica : *Business Law I.K. International*
- 4) K. Aswathappa, *Business Laws*, Himalaya Publishing House,
- 5) K. Ramachandra and others, *Legal Aspects of Business*, Himalaya Publishing House.
- 6) *Tulsion Business Law*
- 7) *Kamashi & Shrikumari, Business Law*
- 8) S.S. Gulshan, *Business Law 3rd Edition*

4.6 COST ACCOUNTING

OBJECTIVE

The objective of this subject is to familiarize students with the various concepts and element of cost.

Unit 1: INTRODUCTION TO COST ACCOUNTING 10 Hours

Introduction – Meaning & Definition of Cost, Costing and Cost Accounting – Objectives of Costing – Comparison between Financial Accounting and Cost Accounting – Application of Cost Accounting – Designing and Installing a Cost Accounting System – Cost Concepts – Classification of Costs – Cost Unit – Cost Center – Elements of Cost – Preparation of Cost Sheet – Tenders and Quotations.

Unit 2: MATERIAL COST CONTROL 15 Hours

Meaning – Types – Direct Material – Indirect Material – Material Control – Purchasing Procedure – Store Keeping – Techniques of Inventory Control – Setting of Stock Levels – EOQ – ABC Analysis – VED Analysis – Just In-Time – Perpetual Inventory System – Documents used in Material Accounting – Methods of Pricing Material Issues – FIFO – LIFO – Weighted Average Price Method and Simple Average Price Method.

Unit 3: LABOUR COST CONTROL 10 Hours

Meaning – Types – Direct Labour – Indirect Labour – Timekeeping – Time booking – Idle Time – Overtime – Labour Turn Over. Methods of Labour Remuneration – Time Rate System – Piece Rate System – Incentive Systems – Halsey plan – Rowan Plan – Taylor's differential Piece Rate System and Merricks differential Piece Rate System – Problems

Unit 4: OVERHEAD COST CONTROL 15 Hours

Meaning and Definition – Classification of Overheads – Procedure for Accounting and Control of Overheads – Allocation of Overheads – Apportionment of Overheads – Primary Overhead Distribution Summary – Secondary Overhead Distribution Summary – Repeated Distribution Method and Simultaneous Equations Method – Absorption of Factory Overheads – Methods of Absorption – Machine Hour Rate – Problems.

Unit 5: RECONCILIATION OF COST AND FINANCIAL ACCOUNTS 10 Hours

Need for Reconciliation – Reasons for differences in Profit or Loss shown by Cost Accounts and Profit or Loss shown by Financial Accounts – Preparation of Reconciliation Statement and Memorandum Reconciliation Account.

SKILL DEVELOPMENT

- Classification of costs incurred in the making of a product.
- Identification of elements of cost in services sector.
- Cost estimation for the making of a proposed product.
- Documentation relating to materials handling in a company.
- Collection and Classification of overheads in an organization.
- Developing a case for reconciliation.

BOOKS FOR REFERENCE

- 1) N.K. Prasad: *Cost Accounting*
- 2) J. Made gowda: *Advanced Cost Accounting*
- 3) Gouri Shankar : *Practical Costing*
- 4) Khanna Pandey & Ahuja : *Practical Costing*
- 5) M.L. Agarwal: *Cost Accounting*
- 6) Palaniappan & Harihara : *Cost Accounting I.K. International*
- 7) Jain & Narang: *Cost Accounting*
- 8) S.P. Iyengar: *Cost Accounting*
- 9) S.N. Maheshwari: *Cost Accounting*
- 10) Horngren: *Cost Accounting – A Managerial Emphasis*
- 11) M. N. Arora: *Cost Accounting, HPH*
- 12) K. S. Thakar: *Cost Accounting*

4.7 INDIAN CONSTITUTION

Unit 1:

- a) Framing of the Indian Constitution: Role of the Constituent Assembly.
- b) Philosophy of the Constitution: Objectives, resolution, preamble, fundamental Rights and Duties. Human rights and Environmental protection.

Unit 2:

- a) Special Rights created in the Constitution of Dalits, Backward Classes, Women and Children, and religious and linguistic minorities.
- b) Directive Principles of State policy: The need to balance fundamental rights with directive principles.

Unit 3:

- a) Union Executive: President, Prime Minister and Council of Ministers; powers and functions, coalition Government, problems in their working.
- b) Union Legislature: Lok Sabha and Rajya Sabha, powers and functions. Recent trends in their functioning.

Unit 4:

- a) State Government: Governor, Chief Minister and Council of ministers, Legislature.
- b) Centre – State relations: Political, financial, administrative: Recent Trends.

Unit 5:

- a) Judiciary: Supreme Court, Judicial Review, Writs, Public interest litigations. Enforcing rights through writs.
- b) Emergency provisions (Article 356)

BOOKS FOR REFERENCE

- 1) Srinivasan D - *Indian Constitution*
- 2) D.D. Basu – *Introduction to the Indian Constitution.*
- 3) A.S. Narang – *Indian Constitution, Government and Politics.*
- 4) Nani Palkhivala – *We, the People, UBS Publishers, New Delhi, 1999.*
- 5) A.G. Noorani – *Indian Government and Politics.*
- 6) G.B Reddy : *Constitutional of India, I.K. International*
- 7) J.C. Johari – *Indian Government and Politics Vol. I & II, Vishal, New Delhi.*
- 8) Gran Ville Austin – *The Indian Constitution – Corner stone of a Nation, Oxford, New Delhi, 2000.*
- 9) M.U. Pylee, *Constitutional Government in India.*
- 10) K.K. Ghai, *Indian Constitution.*
- 11) G.N.K Chowdhary, *Indian Constitution.*

5.1 ENTREPRENEURIAL MANAGEMENT

OBJECTIVE

To enable students to understand the basic concepts of entrepreneurship and prepare business plan to start a small industry.

Unit 1: ENTREPRENEURSHIP

10 Hours

Introduction – Meaning & Definition of Entrepreneurship, Entrepreneur & Enterprise – Differences between Entrepreneurship, Entrepreneur & Enterprise – Functions of Entrepreneur – Role of Entrepreneur for Economic Development - Factors influencing Entrepreneurship - Pros and Cons of being an Entrepreneur – Differences between Manager and Entrepreneur – Qualities of an Entrepreneur – Types of Entrepreneur

Unit 2: ENTREPRENEURSHIP DEVELOPMENT

06 Hours

EDP – Need – Problems – National and State Level Institutions

Unit 3: SMALL SCALE INDUSTRIES

10 Hours

Small Scale Industries - Tiny Industries - Ancillary Industries - Cottage Industries – Definition – Meaning - Product Range - Capital Investment - Ownership Patterns - Importance and Role played by SSI in the development of the Indian Economy - Problems faced by SSI's and the steps taken to solve the problems - Policies Governing SSI's

Unit 4: STARTING A SMALL INDUSTRY

12 Hours

To understand what constitutes a business opportunity, scanning the environment for opportunities, evaluation of alternatives and selection based on personal competencies. - An overview of the steps involved in starting a business venture – location, clearances and permits required, formalities, licensing and registration procedures - Assessment of the market for the proposed project - To understand the importance of financial, technical and social feasibility of the project.

Unit 5: PREPARING THE BUSINESS PLAN (BP)

10 Hours

What is a BP? Why is it important? Who prepares it? Typical BP format - Financial aspects of the BP - Marketing aspects of the BP - Human Resource aspects of the BP - Technical aspects of the BP - Social aspects of the BP - Preparation of BP - Common pitfalls to be avoided in preparation of a BP

Unit 6: IMPLEMENTATION OF THE PROJECT AND SICKNESS IN SSIs

12 Hours

Financial assistance through SFC's, SIDBI, Commercial Banks, KSIDC, KSSIC, IFCI, - Non-financial assistance from DIC, SISI, EDI, SIDO, AWAKE, TCO, TECKSOK, KVIC - Financial incentives for SSI's and Tax Concessions - Assistance for obtaining Raw Material, Machinery, Land and Building and Technical Assistance - Industrial Estates – Role and Types. Sickness: Meaning and definition of a sick industry - Causes of Industrial Sickness - Preventive and Remedial Measures for Sick Industries

SKILL DEVELOPMENT

- Preparation of a Project report to start a SSI Unit.
- Preparing a letter to the concerned authority-seeking license to the SS Unit, You propose to start.
- Format of a business plan.
- A Report on the survey of SSI units in the region where college is located.
- Chart showing financial assistance available to SSI along with rates of interest.
- Chart showing tax concessions to SSI both direct and indirect.
- Success stories of Entrepreneurs in the region.

BOOKS FOR REFERENCE

1. Vasant Desai: *The Dynamics of Entrepreneurship Development and Management*, HPH
2. Mark. J. Dollinger, *Entrepreneurship – Strategies and Resources*, Pearson Edition.
3. Satish Taneja: *Entrepreneur Development*
4. Udai Pareek and T.V. Rao, *Developing Entrepreneurship*
5. S.V.S. Sharma, *Developing Entrepreneurship, Issues and Problems*
6. Srivastava, *A Practical Guide to Industrial Entrepreneurs*
7. Government of India, *Report of the committee on small and medium entrepreneurs, 1975*
8. Vidya Hattangadi ; *Entrepreneurship*
9. N.V.R. Naidu ; *Management and Entrepreneurship, I.K. International*
10. Bharusali, *Entrepreneur Development*
11. Dr. Venkataramanappa, *Entrepreneurial Development*
12. Bholanath Datta: *Entrepreneurship and Management*
13. Anil Kumar : *Small Business and Entrepreneurship*

5.2 COMPUTER APPLICATION IN BUSINESS

OBJECTIVE

The objective of the course is to make the students to understand the concept of information systems used in business and to know the latest trends in doing business in internet environment.

Unit 1: INTRODUCTION TO INFORMATION SYSTEM

10 Hours

Meaning and definition of system, information and information system – business information system – Features of Information system – Uses of Business Information Systems, Users of Information Systems – Components of Business Information Systems.

Unit 2: TYPES OF INFORMATION SYSTEMS

15 Hours

Management Support Systems (MSS), Management Information systems, Transaction Processing systems, Decision Support Systems (DSS), Group Decision Support System (GDSS), Office Automation system, Process Control systems, Executive Information systems, Levels of management and Information systems.

Unit 3: MS OFFICE

15 Hours

MS Word – editing a document- Formatting – Spell Checking – Page setup, Using tabs, Tables and other features Mail Merge, MS Excel – building work sheet- data entry in work sheets, auto fill – working with simple problems- formula – statistical analysis, sort, charts, MS Power point – Design, Side Show – Presentation.

Unit 4: DATABASE MANAGEMENT SYSTEMS

15 Hours

Introduction- Purpose of Database Systems, Views of data, Data Models, Database language, Transaction Management, Storage Management, Database Administrator, Database Users, Overall System Structure, Different types of Database Systems

Unit 5: ACCOUNTING SOFTWARE

05 Hours

Introduction to Tally, Opening new company, Safety of Accounts or Password, Characteristics, Making Ledger Accounts, writing voucher, voucher entry, making different types of voucher, correcting sundry debtors and sundry creditors accounts, preparation of Trail Balance, Accounts books, Cash Book, Bank Books, Ledger Accounts, Group Summary, Sales Register and Purchase Register, Journal Register, Statement of Accounts, & Balance Sheet.

SKILL DEVELOPMENT

Maintain a Record on Practicals.

BOOKS FOR REFERENCE

1. James Obrein, *Management Information Systems*
2. Manjunath, Gundu : *Computer Business Applications*
3. Sudaimuthu & : *Computer Applications in Business*
4. Srivatasava : *Enterprise Resource Planning I.K. International*
5. S Sadagopan, *Enterprise resource planning (ERP)*
6. S.P. Rajagopal, *Computer Application in Business*
7. C.S.V.Murthy: *Management Informa*
8. S. Perekar, Anindita Hatva; *Computer Application in Business*

5.3 BANKING REGULATIONS & PRACTICE

OBJECTIVE

To familiarize the students to understand the law and practice of banking.

Unit 1: COMMERCIAL BANKS

08 Hours

Introduction – Role of Commercial Banks – Functions of Commercial Banks – Primary Functions and Secondary Functions – Credit Creation of Commercial Banks – Investment Policy of Commercial Banks – Profitability of Commercial Banks. Regulation and Control of Commercial Banks by RBI

Unit 2: BANKER AND CUSTOMER RELATIONSHIP

12 Hours

Introduction – Meaning of Banker – Customer – Banking Company – General & Special Relationships of Banker and Customer

Unit 3: NEGOTIABLE INSTRUMENTS

10 Hours

Introduction – Meaning & Definition – Features – Kinds of Negotiable Instruments – Promissory Notes – Bills of Exchange – Cheques – Meaning & Definition – Features - Parties – Crossing of cheques – types of crossing. Endorsements – Meaning – Essentials – Kinds of Endorsement.

Unit 4: PAYING BANKER AND COLLECTING BANKER

10 Hours

Paying Banker – Meaning – Precautions – Statutory Protection to the Paying Banker – Dishonor of Cheques – Grounds of Dishonor – Consequences of wrongful dishonor of Cheque.

Collecting Banker – Meaning – Duties & Responsibilities of Collecting Banker – Holder for Value – Holder in Due Course. Statutory Protection to Collecting Banker

Unit 5: TYPES OF CUSTOMERS AND ACCOUNT HOLDERS

10 Hours

Types of Customers and Account Holders - Procedure and Practice in opening and conducting the accounts of customers particularly individuals including minors - Joint Account Holders. Partnership Firms - Joint Stock companies with limited liability-executors and trustees-clubs and associations-joint Hindu family

Unit 6: PRINCIPLES OF BANK LENDING

10 Hours

Sound principles of Bank Lending – Different kinds of borrowing facilities granted by banks such as Loans, Cash Credit, Overdraft, Bills Purchased, Bills Discounted, Letters of Credit, Types of Securities, NPA.

SKILL DEVELOPMENT

- Collect and fill account opening form of SB A/c or Current A/c
- Collect and fill pay in slip of SB A/c or Current A/c.
- Draw specimen of Demand Draft.
- Draw different types of endorsement of cheques.
- Past specimen of Travellers Cheques / Gift cheques / Credit cheques.
- List customer services offered by atleast 2 banks of your choice.

BOOKS FOR REFERENCE

- 1) Gordon & Natrajan: *Banking Theory Law and Practice*
- 2) Tannan M.L: *Banking Law and Practice in India.*
- 3) P.Subba Rao ; *Bank Management*
- 4) Sheldon H.P: *Practice and Law of Banking.*
- 5) Kothari N. M: *Law and Practice of Banking.*
- 6) Maheshwari. S.N.: *Banking Law and Practice.*
- 7) Shekar. K.C: *Banking Theory Law and Practice.*
- 8) Gagendra Naidu, S. K. Poddar , *Law and Practice of Banking*
- 9) V. Iyengar; *Introduction to Banking*

5.4 CORPORATE GOVERNANCE

OBJECTIVE

To provide basic knowledge of business ethics and values and its relevance in modern context.

Unit 1: BUSINESS ETHICS

10 Hours

Introduction – Meaning - Scope – types of ethics – Characteristics – Factors influencing Business ethics – importance of business ethics - Arguments for and against business ethics- basics of business ethics - corporate social responsibility – issues of management – crisis management

Unit 2: PERSONAL ETHICS

10 Hours

Introduction – Meaning – Emotional Honesty – Virtue of humility – promote happiness – karma yoga – proactive – flexibility and purity of mind.

Unit 3: ETHICS IN MANAGEMENT

10 Hours

Introduction – Ethics in HRM – Marketing Ethics – Ethical aspects of Financial Management – Technology Ethics and Professional ethics.

Unit 4: ROLE OF CORPORATE CULTURE IN BUSINESS

10 Hours

Meaning – functions – impact of corporate culture – cross cultural issues in ethics

Unit 5: CORPORATE GOVERNANCE

10 Hours

Meaning, scope, composition of BODs, Cadbury Committee, various committee, reports on corporate governance, scope of CG, Benefits and Limitations of CG with living examples.

SKILL DEVELOPMENT

- State the arguments for and against business ethics
- Make a list of unethical aspects of finance in any organization
- List out ethical problems faced by managers
- List out issues involved in Corporate Governance.
- List out unethical aspects of Advertising

BOOKS FOR REFERENCE

- 1) H.R.Machiraju: Corporate Governance
- 2) N.M.Khandelwal : Indian Ethos and Values for Managers
- 3) S Prabhakaran; Business ethics and Corporate Governance
- 4) R. R. Gaur, R. Sanghal, G. P. Bagaria; Human Values and Professional ethics
- 5) B O B Tricker, Corporate Governance; Principles , Policies and Practices
- 6) Murthy CSV: Business Ethics and Corporate Governance
- 7) Michael, Blowfield; Corporate Responsibility
- 8) Andrew Crane; Business Ethics
- 9) Ghosh; Ethics in Management and Indian ethos.
- 10)C.V. Badi: Corporate Governance

5.5 MANAGEMENT ACCOUNTING

OBJECTIVE

The objective of this course is to enable the students to understand the analysis and interpretation of financial statements with a view to prepare management reports for decision-making.

Unit 1: INTRODUCTION TO MANAGEMENT ACCOUNTING **08 Hours**

Meaning – Definition – Objectives – Nature and Scope of Management Accounting – Role of Management Accountant – Relationship between Financial Accounting and Management Accounting, Relationship between Cost Accounting and Management Accounting.

Unit 2: FINANCIAL STATEMENTS **12 Hours**

Analysis of financial statements – comparative statements, comparative income statement, comparative Balance sheet – common size statements – Common size income statement, common size balance sheet – Trend percentages. Reporting to management – management decision and analysis.

Unit 3: RATIO ANALYSIS **12 Hours**

Meaning and Definition of Ratio, Accounting Ratio and Ratio Analysis – Uses – Limitations – Classification of Ratios – Problems on Ratio Analysis - Preparation of Trading and Profit & Loss Account and Balance Sheet with the help of Accounting Ratios

Unit 4: FUND FLOW ANALYSIS **10 Hours**

Meaning and Concept of Fund – Meaning and Definition of Fund Flow Statement – Uses and Limitations of Fund Flow Statement – Procedure of Fund Flow Statement – Statement of changes in Working Capital – Statement of Funds from Operation – Statement of Sources and Application of Funds – Problems.

Unit 5: CASH FLOW ANALYSIS **10 Hours**

Meaning and Definition of Cash Flow Statement – Differences between Cash Flow Statement and Fund Flow Statement – Uses of Cash Flow Statement – Limitations of Cash Flow Statement – Provisions of AS-3 – Procedure of Cash Flow Statement – Concept of Cash and Cash Equivalents - Cash Flow from Operating Activities – Cash Flow from Investing Activities and Cash Flow from Financing Activities – Preparation of Cash Flow Statement according to AS-3 (Indirect Method Only).

Unit 6: CVP ANALYSIS AND BUDGETORY CONTROL **10 Hours**

Introduction – Meaning and Definition of Marginal Cost & Marginal Costing – Features – Cost Volume Profit Analysis – Assumptions – Uses – Contribution – P/V Ratio – Break Even Point – Margin of Safety – Angle of Incidence – Break Even Chart – Problems – BUDGETORY CONTROL: Introduction – Meaning & Definition of Budget and Budgetary

Control – Objectives of Budgetary Control – Classification of Budgets – Flexibility
Classification – Functional Budgets – Problems on Flexible Budgets and Cash Budgets.

SKILL DEVELOPMENT

- Collection of financial statements of any one organization for two years and preparing comparative statements
- Collection of financial statements of any two organization for two years and prepare a common Size Statements
- Collect statements of an Organization and Calculate Important Accounting Ratio's
- Draft a report on any crisis in an organization.

BOOKS FOR REFERENCE

1. Dr. S.N. Maheswari, Management Accounting
2. Sexana, Management Accounting
3. J. Made Gowda: Management Accounting
4. Dr. S.N. Goyal and Manmohan, Management Accounting
5. Jawahar Lal : Essentials of Managerial Accounting
6. B.S. Raman, Management Accounting
7. Dr. Ramachandra, Dr. Chandra Shekar & Shivarudrappa ; Management Accounting
8. Sharma and Gupta, Management Accounting
9. PN Reddy & Appanaiah, Essentials of Management Accounting.
10. Sudhindra Bhatt; Management Accounting

6.1 INTERNATIONAL BUSINESS

OBJECTIVE

The objective of this course is to facilitate the students in understanding of International Business in a multi cultural world.

Unit 1: INTRODUCTION TO INTERNATIONAL BUSINESS

8 Hours

Meaning and Definition of International Business – Theories of International Trade – Economic Theories – Forms of International Business - Nature of International Business

Unit 2: MODE OF ENTERING INTERNATIONAL BUSINESS

12 Hours

Mode of Entry – Exporting – Licensing – Franchising – Contract Manufacturing – Turn Key Projects – Foreign Direct Investment – Mergers, Acquisitions and Joint Ventures – Comparison of different modes of Entry.

Unit 3: GLOBALIZATION

12 Hours

Meaning and Definition - Features – Stages – Stages of Markets Production – Investment and Technology Globalization – Advantages and Disadvantages – Methods and Essential Conditions for Globalization.

Unit 4: MNCs AND INTERNATIONAL BUSINESS

10 Hours

Definitions – Distinction among Indian Companies – MNC – Global Companies and TNC – Organizational Transformations – Merits and Demerits of MNC's in India.

Unit 5: INTERNATIONAL MARKETING INTELLIGENCE

8 Hours

Information required – Source of Information – International Marketing Information System and Marketing Research.

Unit 6: EXIM TRADE

10 Hours

Export Trade, Procedure, Steps & Documentation Direction of India's Trade – Export Financing – Document Related to Export Trade – Export Marketing – Import Trade,

Procedure, Steps, Documentations and Problems - EXIM Policy - Balance of Payment - Disequilibrium and Measures for Rectification - Institutions connected with EXIM Trade.

SKILL DEVELOPMENT

- List any three MNC's operating in India along with their products or services offered.
- Prepare a chart showing currencies of different countries
- Tabulate the foreign exchange rate or at least 2 countries for 1 month
- Collect and Paste any 2 documents used in Import and Export trade.

BOOKS FOR REFERENCE

- 1) *Dr. Aswathappa International Business*
- 2) *P. Subba Rao - International Business - HPH*
- 3) *Francis Cherunilam; International Business, Prentice Hall of India*
- 4) *Mahua Dutta, International Business, I.K. Intl*
- 5) *Dr. Ramachandra, Dr. Chandrashekar, International Business*
- 6) *J. Maskeri- International Business*
- 7) *Shyam Shukla; International Business*
- 8) *Rosy Joshi; International Desmoch*

6.2 E-BUSINESS

Objective: To expose the students to electronic modes of commercial operations.

UNIT 1. E-BUSINESS

15 Hours

Introduction, E-Commerce – definition, History of E-commerce, types of E-Commerce B to B etc. Comparison of traditional commerce and e-commerce. E-Commerce business models – major B to B, B to C model, Consumer-to-Consumer (C2C), Consumer-to-Business (C2B) model, Peer to-Peer (P2P) model – emerging trends. Advantages/ Disadvantages of e-commerce, web auctions, virtual communities, portals, e-business revenue models.

UNIT 2. Hardware and Software for E-Business

10 Hours

Web server hardware and software – software for web servers, Website and internet utility programs, Web server hardware, web hosting choices – electronic commerce software – shopping cart.

UNIT 3. SECURITY FOR E-BUSINESS

10 Hours

Security threats – an area view – implementing E-commerce security – encryption – Decryption, Protecting client computers E-Commerce Communication channels and web servers Encryption, SSL protocol, Firewalls, Cryptography methods, VPNs, protecting networks, policies and procedures

UNIT 4. E-PAYMENTS

10 Hours

E-payment systems – an overview. B to C payments, B to B payments. Types of E-payment system – Credit card payment, debit cards, accumulating balance, online stored value payment systems, digital cash, digital (electronic) wallets, agile wallet, smart cards and digital cheques. Secure Electronic Transaction (SET) protocol

UNIT 5. E-BUSINESS MARKETING TECHNOLOGIES

10 Hours

E-Commerce and marketing B to B and B to C marketing and branding strategies. Web transaction logs, cookies, shopping cart database, DBMS, SQL, data mining, CRM (customer relationship Management) system – permission marketing, affiliate marketing, viral marketing.

UNIT 6. Cyber Laws

05 Hours

Legal Aspects of E-Business, Internet frauds – cyber laws. IT Act 2000 salient features.

SKILL DEVELOPMENT

- Visit Few Business Websites and note down in Practical Record Book

REFERENCE BOOKS

1. Kalakota Ravi and A. B. Whinston : *Frontiers of Electronic Commerce*, Addison
2. Watson R T : *Electronic Commerce – the strategic perspective*. The Dryden press
3. Agarwala K.N and Deeksha Ararwala: *Business on the Net – Whats and Hows of E-Commerce*
4. Agarwala and Ararwala : *Business on the Net – Bridge to the online store front*,
5. Murthy CSV: *E. Commerce Himalaya Publishing House Pvt.Ltd.*
6. Diwan, Prag and Sharma, *Electronic Commerce – A manager guide to E-business*,
7. Janal D.S : *Online Marketing Hand book*. Van Nostrand Reinhold Network
8. Kosiur David, *Understanding Electronic Commerce* Microsoft, press Washing-ton.
9. Minoli and Minol, *Web Commerce Technology Handbook*, TMH New Delhi.
10. Schneider Gary P, *Electronic Commerce course Technology Delhi*.
11. Young Margaret Levine: *The complete reference to Internet*, TMH.
12. C.S.Rayudu: *Ecommerce and E Business*
13. Kalakota Ravi: *E-business 2: Road map for success*.
14. Kalkota Ravi. *Electronics Commerce: A managers Guide*.
15. P. Diwan, S. Sharma; *E-Commerce*

6.3 INCOME TAX

OBJECTIVE

The Objective of this course is to expose the students to the various provision of Income Tax Act relating to computation of Income individual assesses only.

Unit 1: INTRODUCTION TO INCOME TAX

5 Hours

Brief History of Income Tax - Legal Frame Work – Types of Taxes - Cannons of Taxation – Important Definitions – Assessment – Assessment Year – Previous Year – Exceptions to the general rule of Previous Year - Assessee – Person – Income - Casual Income – Gross Total Income – Agricultural Income

Unit 2: RESIDENTIAL STATUS

5 Hours

Residential Status of an Individual – Resident – Not Ordinarily Resident – Non-resident – Determination of Residential Status – Incidence of Tax – Problems on Scope of Total Income.

Unit 3: EXEMPTED INCOMES

5 Hours

Introduction – Exempted Incomes U/S 10 (Restricted to Individual Assessee).

Unit 4: INCOME FROM SALARY

15 Hours

Meaning – Basis of Charge – Advance Salary – Arrears of Salary - Definitions – Salary Allowances – Fully Taxable Allowances – Partly Taxable Allowances – Fully Exempted Allowances – Perquisites – Tax Free Perquisites – Taxable Perquisites – Perquisites Taxable in all Cases – Perquisites Taxable in Specified Cases – Profits in Lieu of Salary – Provident Fund – Transferred Balance – Deductions from Salary U/S 16 – Problems on Income from Salary

Unit 5: INCOME FROM HOUSE PROPERTY**10 Hours**

Basis of Charge – Deemed Owners – Exempted Incomes from House Property – Treatment of Composite Rent – Annual Value – Determination of Annual Value – Treatment of Unrealized Rent – Loss due to Vacancy – Deductions from Annual Value – Problems on Income from House Property

Unit 6: PROFITS AND GAINS FROM BUSINESS AND PROFESSION**15 Hours**

Meaning and Definition of Business, Profession – Expenses Expressly Allowed – Allowable Losses – Expenses Expressly Disallowed – Expenses Allowed on Payment Basis – Problems on Business relating to Sole Trader only and Problems on Profession relating to Chartered Accountant, Advocate and Doctor.

Unit 6: CAPITAL GAINS (Theory only).**UNIT 7: INCOME FROM OTHER SOURCES (theory only).****UNIT 8: COMPUTATATION OF GTI.****5 Hours****SKILL DEVELOPMENT**

- Form No. 49A (PAN) and 49B.
- Filling of Income Tax Returns.
- List of enclosures to be made along with IT returns (with reference to salary & H.P).
- Preparation of Form 16.
- Computation of Income Tax and the Slab Rates.
- Computation of Gratuity.
- Chart on perquisites.
- List of enclosures to be made along with IT returns (with reference to salary and house property incomes)

BOOKS FOR REFERENCE

- 1) *Dr. Vinod K. Singhania: Direct Taxes – Law and Practice, Taxmann publication.*
- 2) *B.B. Lal: Direct Taxes, Konark Publisher (P) Ltd.*
- 3) *Dr. Mehrotra and Dr. Goyal: Direct Taxes – Law and Practice, Sahitya Bhavan Publication.*
- 4) *Dinakar Pagare: Law and Practice of Income Tax, Sultan Chand and sons.*
- 5) *Gaur & Narang: Income Tax.*

6.4 STRATEGIC MANAGEMENT

Objective: The Objective of this course is to expose the students to the various strategic issues such as strategic planning, implementation and evaluation etc.

Unit 1: INTRODUCTION TO STRATEGIC MANAGEMENT **10 Hours**

Introduction - Meaning and Definition - Need - Process of Strategic Management - Strategic Decision Making - Business Ethics - Strategic Management.

Unit 2: ENVIRONMENTAL APPRAISAL **12 Hours**

The concept of Environment - The Company and its Environment - Scanning the Environment, Technological, Social, Cultural, Demographic, Political, Legal and Other Environments Forces. SWOT Analysis - Competitive Advantage - Value Chain Analysis.

Unit 3: STRATEGIC PLANNING **13 Hours**

Strategic Planning Process - Strategic Plans during recession, recovery, boom and depression - Stability Strategy - Expansion Strategy - Merger Strategy - Retrenchment Strategy - Restructures Strategy - Levels of Strategy - Corporate Level Strategy - Business Level Strategy and Functional Level Strategy - Competitive Analysis - Porter's Five Forces Model.

Unit 4: IMPLEMENTATION OF STRATEGY **15 Hours**

Aspects of Strategy Implementation - Project Manipulation - Procedural Implementation - Structural Implementation - Structural Considerations - Structures for Strategies - Organizational Design and Change - Organizational Systems. Behavioral Implementation - Leadership Implementation - Corporate Culture - Corporate Policies and Use of Power. Functional and Operational Implementation - Functional Strategies - Functional Plans and Policies. Financial - Marketing - Operational and Personnel dimensions of Functional Plan and Policies - Integration of Functional Plans and Policies.

Unit 5: STRATEGY EVALUATION **10 Hours**

Strategy Evaluation and Control - Operational Control - Overview of Management Control - Focus on Key Result Areas.

SKILL DEVELOPMENT

- Present a chart showing Strategic Management Process.
- Select any organization and undertake SWOT analysis.
- Present strategy followed by an FMCG company in Indian Market.
- Select any sector and make competitive analysis using Porter's five forces model.
- List social responsibility action initiated by any one company.
- Select any organization and identify the Key Result Areas

BOOKS FOR REFERENCE

1. Charles W.L Hill and Gareth R. Jones, *Strategic Management an Integrated Approach*
2. Dr. Aswathappa, *Business Environment for Strategic Management*
3. Azhar Kazmi, *Business Policy and Strategic Management*
4. Subbarao: *Business Policy and Strategic Management*
5. Ghosh P.K., *Business Policy and Strategic Planning and Management.*
6. Pillai, *Strategic Management*
7. Lawrence, *Business Policy and Strategic Management.*
8. C. Appa Rao; *Strategic Management and Business Policy*
9. Sathyashekar : *Business Policy and Strategic Management.*

FINANCE GROUP

5.6 ADVANCED FINANCIAL MANAGEMENT

OBJECTIVE

To familiarize students with Advance Financial Management decisions.

Unit 1: INVESTMENT DECISIONS AND RISK ANALYSIS

12 Hours

Risk Analysis – Types of Risks – Risk and Uncertainty – Techniques of Measuring Risks – Risk adjusted Discount Rate Approach – Certainty Equivalent Approach – Sensitivity Analysis – Probability Approach – Standard Deviation and Co-efficient of Variation – Decision Tree Analysis – Problems.

Unit 2: COST OF CAPITAL

12 Hours

Meaning and Definition – Significance of Cost of Capital – Types of Capital – Computation of Cost of Capital – Specific Cost – Cost of Debt – Cost of Preference Share Capital – Cost of Equity Share Capital – Weighted Average Cost of Capital – Problems.

Unit 3: CAPITAL STRUCTURE THEORIES

12 Hours

Introduction – Capital Structure – Capital Structure Theories - Net Income Approach - Net Operating Income Approach - Traditional Approach – MM Approach – Problems.

Unit 4: DIVIDEND THEORIES

10 Hours

Introduction – Irrelevance Theory – MM Model. Relevance Theories - Walter Model - Gordon Model – Problems on Dividend Theories.

Unit 5: PLANNING AND FORECASTING OF WORKING CAPITAL

10 Hours

Concept of Working Capital – Determinants of Working Capital – Estimating Working Capital Needs – Operating Cycle – Cash Management – Motives of Holding Cash – Cash Management Techniques – Preparation of Cash Budget – Receivables Management – Preparation of Ageing Schedule and Debtors Turnover Ratio – Inventory Management Techniques – Problems on EOQ.

UNIT 6: CORPORATE VALUATION

04 hours

DCF method, relative valuation method, net asset method, value based management.

SKILL DEVELOPMENT

- Preparation of a small project report of a small business concern covering all components- (Finance, Marketing, Production, Human Resources, General administration) (Any one component can be selected as a title of the report)
- Designing a capital structure for a Trading concern
- Preparing a blue print on working capital of a small concern.
- Prepare a chart on Modes of cash budget.
- List out different modes of Dividend Policy.
- List out the Companies, which have declared dividends recently along with the rate of dividend.

BOOKS FOR REFERENCE

1. Narendra Singh : Advanced Financial Management
2. S N Maheshwari, Financial Management Principles and Practice.
3. Khan and Jain, Financial Management.
4. Sudarshan Reddy: Advance Financial Management
5. Sharma and Sashi Gupta, Financial Management.
6. I M Pandey, Financial Management.
7. Prasanna Chandra, Financial Management.
8. PV Kulkarni & BG Sathya Prasad, Financial Management.
9. P.K. Sinha; Financial Management

5.7 FINANCIAL MARKETS & SERVICES

OBJECTIVE

To familiarize the students with Traditional and Modern Financial Services.

Unit 1: FINANCIAL MARKETS

12 Hours

Primary Market - Meaning - Features - Players of Primary Market - Instruments in Primary Market (Names) - Procedure for issuing Equity and Debentures - SEBI guidelines towards the issue of Equity Shares and Debentures - Merits and Demerits of Primary Markets. Secondary Market - Meaning - Structure - Functions - Trading and Settlement System of Stock Exchange Transactions - Players in the Stock Market - Merits and Demerits of Stock Markets - Reforms in Stock Market - OTCEI and NSE - Origin - Function - Merits - Demerits.

Unit 2: NON-BANKING FINANCIAL INTERMEDIARIES

12 Hours

Investment & Finance Companies - Merchant Banks - Hire Purchase Finance - Lease Finance - Housing Finance - Venture Capital Funds and Factoring.

Unit 3: SEBI

12 Hours

Objectives of SEBI - Organization - Functions and Functioning of SEBI - Powers of SEBI - Role of SEBI in marketing of Securities and Protection of Investor Interest.

Unit 4: MUTUAL FUNDS

14 Hours

Concept of Mutual Funds - Growth of Mutual Funds in India - Mutual Fund Schemes - Money Market Mutual Funds - Private Sector Mutual Funds - Evaluation of the performance of Mutual Funds - Functioning of Mutual Funds in India.

Unit 5: RECENT TRENDS IN FINANCIAL SERVICES

10 Hours

Personalized Banking - ATM - Tele-banking & E-banking - Credit & Debit Card - Customization of Investment Portfolio - Financial Advisors.

SKILL DEVELOPMENT

- Collection of Share certificate / debenture certificate.
- Chart showing modus operandi of leasing - hire purchase procedures.
- Collect any specimen of new Financial Instruments and record the same.
- Select any Mutual Fund and examine the various closed and open-ended schemes offered.
- Visit any Housing Finance Companies and analyse the features of various financing schemes offered.

BOOKS FOR REFERENCE

1. Vasant Desai : *Financial Markets & Financial Services*, Himalaya Publishing House.
2. Meir Kohn: *Financial Institutions and Markets*, Tata McGraw Hill
3. L M Bhole: *Financial Institutions and Markets*, Tata McGraw Hill
4. E Gardon & K Natarajan: *Financial Markets & Services*
5. V.A. Avadhani : *Financial Services in India*.
6. R.M. Srivastava / D. Nigam; *Dynamics of Financial Markets & Institutions in India*

6.5 INVESTMENT & PORTFOLIO MANAGEMENT

Unit 1: INTRODUCTION TO INVESTMENT MANAGEMENT

12 Hours

Meaning of Investment – Selection of Investment – Classification of Securities – Risk and Uncertainty – Types of Risks – Risk and Expected Return – Measurement of Portfolio Risk – Benefits of Diversification – Investment Strategies – Types of Companies and Stocks – Matrix approach in Investment Decision – Investment Avenues

Unit 2: SECURITY ANALYSIS

14 Hours

Introduction – Fundamental Analysis – Economic Analysis – Industry Analysis – Company Analysis. Technical Analysis – Dow Theory – Advanced Declined Theory – Chartism Assumptions of Technical Analysis.

Unit 3: MODERN PORTFOLIO THEORY

12 Hours

Introduction – Mean – Variance Model – Markowitz Model – Sharpe single index model – Capital Market Line – Market Portfolio – Capital Asset Pricing Model – Security Market Line – Beta Factor – Alpha and Beta Coefficient – Arbitrage Pricing Model.

Unit 4: PORTFOLIO EVALUATION

10 Hours

Sharpe's measure, Jensen's measure, Treynor's measure.

Unit 5: GLOBAL MARKETS

12 Hours

Global Investment Benefits – Introduction to ADRs, GDRs, FCCBs, Foreign Bonds, Global Mutual Funds – Relationship between Trends in Global Markets and the Domestic Markets

BOOKS FOR REFERENCE

1. Preeti Singh: *Investment Management*
2. Kevin, *Investment and Portfolio Management*
3. A.P. Dash : *Security Analysis and Portfolio Management, I.K. International*
4. Prasanna Chandra, *Investment Analysis and Portfolio Management, Mcgraw-Hill*
5. Fischer and Jordan, *Security Analysis and Portfolio Management, Prentice Hall*
6. Avadhani, *Investment Analysis and Portfolio Management, HPH*
7. Punithavathy, Pandian, *Investment Analysis and Management.*
8. Sudhindra Bhatt; *Security Analysis and Portfolio Management.*

6.6 STOCK AND COMMODITY MARKETS

Objective: To provide students with a conceptual framework of stock markets and commodity markets, functionalities in these markets and their mode of trading.

1. AN OVERVIEW OF CAPITAL AND COMMODITY MARKETS: 10 Hours

Primary Market, Secondary Market (Stock Market), Depositories, Private placements of shares / Buy back of shares, Issue mechanism. Meaning of commodity and Commodity markets, difference between stock market and commodity market.

2. STOCK MARKET:

12 Hours

History, Membership, Organization, Governing body, Functions of stock Exchange, on line trading, role of SEBI, Recognized Stock Exchanges in India (brief discussion of NSE BSE and Nifty), Derivatives on stocks: meaning, types (in brief).

3.

4. TRADING IN STOCK MARKET:

14 Hours

Patterns of Trading & Settlement – Speculations – Types of Speculations – Activities of Brokers – Broker Charges – Settlement Procedure, National Securities Depository Ltd.(NSDL) Central Securities Depository Ltd.(CSDL) (in brief).

5. COMMODITY MARKET: 14 Hours
Evolution, Commodity derivatives, Commodity exchanges-Regional & National and International, Functions objectives and types, Role. Types of transactions in Commodity market – Spot, Future and Forward options markets.

6. TRADING IN COMMODITY MARKETS: 10 Hours
Patterns of Trading & Settlement, Price discover, Efficiency of Commodity Markets - Size of Commodity Markets in India - Benefits of Commodity Markets.

Reference Books:

1. *Gurusamy, Financial Markets and Institutions, 3rd edition, Tata McGraw Hill.*
2. *Srivastava RM : Management of Financial Institutions, HPH*
3. *Saunders, Financial Markets and Institutions, 3rd edition, Tata McGraw Hill.*
4. *Khan, Indian Financial Systems, 6th edition, Tata McGraw Hill*
5. *Bhole, L.M. (2000), Indian Financial Institutions, Markets and Management, McGraw Hill, New York*
6. *Pallavi Modi: Equity – The Next Investment destination.*
7. *Avadhani (2010) Financial Markets and Services, Himalaya Publishers*
8. *Bharat Kulkarni; Commodity Markets and Derivatives*

MARKETING GROUP

5.6 CONSUMER BEHAVIOR

Unit 1: INTRODUCTION 8 Hours
Introduction to Consumer Behaviour - A managerial & consumer perspective; why study consumer behaviour? ; Applications of consumer behaviour knowledge; current trends in Consumer Behaviour; Market segmentation & consumer behaviour.

Unit 2: INDIVIDUAL DETERMINANTS OF CONSUMER BEHAVIOUR 14 Hours
Consumer needs & motivation; personality and self-concept; consumer perception; learning & memory; nature of consumer attitudes; consumer attitude formation and change.

Unit 3: ENVIRONMENTAL DETERMINANTS OF CONSUMER BEHAVIOUR 12 Hours
Family influences; the influence of culture; subculture & cross cultural influences; group dynamics and consumer reference groups; social class & consumer behaviour.

Unit 4: CONSUMER'S DECISION MAKING PROCESS 8 Hours
Problem recognition; Search & Evaluation; Purchase processes; Post-purchase behaviour; personal influence & opinion leadership process; diffusion of innovations; Models of Consumer Behaviour; Researching Consumer behaviour; consumer research process.

Unit 5: CONSUMER SATISFACTION & CONSUMERISM 8 Hours
Concept of Consumer Satisfaction; Working towards enhancing consumer satisfaction; sources of consumer dissatisfaction; dealing with consumer complaint. Concept of consumerism; consumerism in India; the Indian consumer; Reasons for growth of consumerism in India; Consumer protection Act 1986.

SKILL DEVELOPMENT:

- Conduct an informal interview of a local retail store owner and determine what demographic and socio economic segments the store appears to satisfy. How did the owner select this segment or segments?
- Conduct formal interview to the managers of three retail-clothing stores. Determine the degree to which they believe consumer's personality and self-image are important to the marketing activities of the stores.
- Visit three local restaurants and assess how each attracts clientele in different stages of the family life cycle.
- You are the owner of two furniture stores, one catering to upper-middle class consumers and the other to lower-middle class consumers. How do social class differences influence each store's
 - Product lines & styles
 - Advertising media selection
 - The copy & communication styles used in the advertisements
 - Payment policies
- For each of the following Products & services, indicate who you would go to for information and advice;
 - The latest fashion in clothes
 - Banking
 - Air travel
 - Vacation destinations
 - A personal computer
- For each situation; indicate the person's relationship to you and your reasons for selecting him/her as the source of information and advice.

REFERENCE BOOKS:

- 1) Leon. G. Schiffman & Leslve Lazer kanuk; *Consumer behaviour*; 6th Edition; PHI, New Delhi, 2000.
- 2) Suja.R.Nair, *Consumer behaviour in Indian perspective*, First Edition, Himalaya Publishing House, Mumbai, 2003.
- 3) David. L. Loudon & Albert J. Bitta; *Consumer Behaviour*; 4th Edition, Mcgraw Hill, Inc; New Delshi, 1993.
- 4) Assael Henry; *Consumer behaviour and marketing action*; Asian Books(P) Ltd, Thomson learning, 6th Edition; 2001.
- 5) Jay D. Lindquist & M. Joseph Sirgy, *Shopper, Buyer and Consumer Behaviour*, 2003.
- 6) Blackwell; *Consumer Behaviour*, 2nd Edition.
- 7) S.A.Chunawalla : *Commentary on Consumer Behaviour*.
- 8) Sontakki; *Consumer Behaviour*.
- 9) Schiffman; *Consumer Behaviour*.
- 10)Batra/Kazmi; *Consumer Behaviour*.

5.7 ADVERTISING & MEDIA MANAGEMENT

Unit 1: INTRODUCTION & BASIC CONCEPTS

10 Hours

History of advertising; Advertising purpose and functions; Economic, social & ethical aspects of advertising; Advertising & the marketing mix, Advertising as a communication process; types of advertising; Major Institutions of advertising management.

Unit 2: ADVERTISING AND CAMPAIGN PLANNING

8 Hours

Marketing strategy & situation analysis; Advertising plan; Advertising objectives; DAGMAR approach; advertising strategy; Advertising campaign-planning process.

Unit 3: CREATIVE STRATEGY & ADVERTISING BUDGET

12 Hours

Creative approaches; the art of copywriting; Advertising copy testing; creativity in communication, motivational approaches & appeals, advertising budget process; methods of determining advertising appropriations.

Unit 4: ADVERTISING MEDIA STRATEGY

10 Hours

Role of media; types of media; their advantages and disadvantages; media research & advertising decisions; media planning, selection & scheduling strategies.

Unit 5: ADVERTISING EFFECTIVENESS & ORGANISING ADVERTISING FUNCTIONS.

10 Hours

Methods of measuring advertising effectiveness; advertising research; structure & functions of an advertising agency; selection & co-ordination of advertising agency; Advertising regulations; Internet advertising.

SKILL DEVELOPMENT:

- Sketch the competitive position for the development of an advertising plan for Sahara Airlines & Tata Telephones.
- Define the advertising objectives on DAGMAR Approach for any product of your choice.
- By selecting an appropriate theme & appeal, create & enact an advertisement for a range of any established products. For this purpose, the class should be divided into groups and formal presentations have to be evaluated.
- Select two print & electronic media for the purpose of understanding the functions of advertising media. Comparative analysis of the same should be done & short reports must be prepared.
- Get into the exciting world of internet / Net advertising and identify the message content of 10 products / Services of your choice.

REFERENCE BOOKS:

- 1) *Rajeev Batra, John.G.Myers.T.David.A.Aaker; Advertising Management; 5th Edition, PHI Edition, New Delhi, 1998.*
- 2) *Jeffkins & Yadin; Advertising, 4th Edition; Pearson Education, New Delhi, 2000.*
- 3) *Manendra Mohan; Advertising Management - Concepts & Cases; Tata McGraw Hill Publishing company Ltd, New Delhi 2001.*
- 4) *S.A.Chunnawalia & K.c.Sethia Foundations of Advertising - Theory & Practice, Himalaya Publishing House, 2002.*
- 5) *Sonatakki, Advertising.*
- 6) *Wells, Advertising.*
- 7) *Rayudu: Media and Communication Management*
- 8) *Kazmi/Batra; Advertising & Sales promotion 3rd Edition*

6.5 BRAND MANAGEMENT

OBJECTIVE

To enable the students to acquire skills in Product & Brand Management.

Unit 1: PRODUCT MANAGEMENT

05 Hrs

Meaning of Product – Product Personality, Types of Products – Product Line, Product Mix.

Unit 2: PRODUCT DEVELOPMENT

12 hrs

Factors influencing design of the product – Changes affecting product management – Developing Product Strategy; Setting objectives & alternatives, Product strategy over the lifecycle, Customer analysis, Competitor analysis, Design of manufacture. New product development – Product Differentiation and Positioning strategies. Failure of New Product.

Unit 3: MARKET POTENTIAL & SALES FORECASTING

12 hrs

Forecasting target market potential and sales – Methods of estimating market and sales potential, Sales forecasting, planning for involvement in international market.

Unit 4: BRAND MANAGEMENT

12 hrs

Meaning of Brand – Brand Development: Extension, Rejuvenation, Re launch- Product Vs Brands, Goods and services, Retailer and distributors, People and organization, Brand challenges and opportunities, The brand equity concept, Identity and Image.

Unit 5: BRAND LEVERAGING AND BRAND PERFORMANCE

12 hrs

Establishing a brand equity management system, measuring sources of brand equity and consumer mindset, Co-branding, celebrity endorsement. Brand Positioning & Brand Building – Brand knowledge, Brand portfolios and market segmentation – Steps of brand building, Identifying and establishing brand positioning, Defining and establishing brand values.

Unit 6: DESIGNING & SUSTAINING BRANDING STRATEGIES

07 hrs

Brand hierarchy, Branding strategy, Brand extension and brand transfer – Managing brand over time.

BOOKS FOR REFERENCE

- 1) Gupta SL: Brand Management
- 2) Branding Concepts- Pati, Debashish
- 3) Brand Building : M.Bhattacharjee
- 4) Brand Positioning Strategies for Competitive Advantage- Subrato Sengupta
- 5) The New Strategic Brand Management- Kapfere, Jean-Noel
- 6) Brand Management Perspectives and Practices- Das, Naveen
- 7) Total Brand Management: An Introduction- Chaturvedi, B.M
- 8) Brand Management Financial Perspectives- Ray
- 9) Harsh V. Verama; Brand Management

6.6 RETAIL MANAGEMENT

OBJECTIVE

To expose students to acquire skills in Retail Management.

Unit 1: INTRODUCTION TO RETAILING

12 Hrs

Definition – functions of retailing – types of retailing – forms of retailing based on ownership. Retail theories – Wheel of Retailing – Retail life cycle. Retailing in India – Influencing factors – present Indian retail scenario. Retailing from the International perspective

Unit 2: CONSUMER BEHAVIOUR IN THE RETAIL CONTEXT

12 Hrs

Buying decision process and its implication to retailing – influence of group and individual factors. Customer shopping behaviour Customer service satisfaction. Retail planning process – Factors to consider – Preparing a complete business plan – implementation – risk analysis.

Unit 3: RETAIL OPERATIONS

12 Hrs

Choice of Store location – Influencing - Factors Market area analysis – Trade area analysis – Rating Plan method - Site evaluation. Retail Operations: Store Layout and visual merchandising – Store designing – space planning. Retail Operations: Inventory management – Merchandise Management – Category Management.

Unit 4: RETAIL MARKETING MIX

12 Hrs

Retail marketing mix – an Introduction. Retail marketing mix: Product – Decisions related to selection of goods (Merchandise Management revisited) – Decisions related to delivery of service. Retail marketing mix: Pricing – Influencing factors – approaches to pricing – price sensitivity - Value pricing – Markdown pricing. Retail marketing mix: Place – Supply channel – SCM principles – Retail logistics – computerized replenishment system – corporate replenishment policies. Retail marketing mix: Promotion – Setting objectives – communication effects - promotional mix. Human Resource Management in Retailing – Manpower planning – recruitment and training – compensation – performance appraisal.

Unit 5: IMPACT OF IT IN RETAILING

12 Hrs

Non store retailing The impact of Information Technology in retailing - Integrated systems and networking – EDI – Bar coding – Electronic article surveillance – Electronic shelf labels – customer database management system. Legal aspects in retailing. Social issues in retailing. Ethical issues in retailing.

BOOKS FOR REFERENCE

- 1) Barry Bermans and Joel Evans, "Retail Management – A Strategic Approach", 8th edition, PHI private limited, Newdelhi, 2002.
- 2) Suja Nair: Retail Management
- 3) A.J.Lamba, "The Art of Retailing", 1st edition, Tata McGrawHill, Newdelhi, 2003.
- 4) Retailing Management by Swapna Pradhan, 2/e, 2007 & 2008, TMH
- 5) Integrated Retail Management by James R. Ogden & Denise T.
- 6) Ogden, 2007, Biztantra
- 7) R.S.Tiwari : Retail Management , HPH
- 8) Araif Sakh: Retail Management
- 9) Retail Management – Levy & Weitz-TMH 5th Edition 2002
- 10) Retail Management by Rosemary Varley, Mohammed Rafiq-
- 11) Retail Management by Chetan Bajaj-Oxford Publication.
- 12) Retail Management by Uniyal & Sinha-Oxford Publications.
- 13) A. Siva Kumar; Retail Marketing.

INTERNATIONAL BUSINESS GROUP

5.6 INTERNATIONAL MARKETING MANAGEMENT

UNIT – 1: INTERNATIONAL MARKETING

8 hours

Meaning – Reasons and Motives for International marketing – International Marketing Decisions – Scope of marketing Indian products abroad.

UNIT – 2: NATURE AND SCOPE OF INTERNATIONAL MARKETING

8 hours

Features of International Marketing – Need for international Trade – International Marketing Environment - The basis of International Trade - Theory of comparative cost - Modern Theories - Tariff and Non-Tariff barriers - WTO and its impacts.

UNIT – 3: INTERNATIONAL MARKETING INTELLIGENCE

6 hours

Requirement and Sources of Information's – systems and marketing research – Problems in International Marketing research.

UNIT – 4: FEATURE OF INTERNATIONAL MARKETING

10 Hours

Special features of International Marketing

Identifying foreign market product scanning for exports. Export distribution and channels packaging: Overseas market research pricing.

UNIT-5. INTERNATIONAL PRODUCT DECISIONS AND PRICING

16 Hours

International Product Decisions. Product, Product mix, Branding, Packaging Labelling and Product Communication Strategies. Exporters cost and Pricing Objectives – methods and Approaches and Steps – transfer pricing – dumping – Information Requirements for pricing.

UNIT – 6: INTERNATIONAL DISTRIBUTION AND PROMOTION

12 Hours

International channels System – Direct and Indirect Exports – Distributions Strategies and International logistics.

Marketing Environment and promotion Strategy – International marketing Communication mix – export promotion Organization trade Fair and Exhibitions – Problems in International Marketing.

SKILL DEVELOPMENT:

- Understand the role of WTO in International Marketing.
- Report form the literature available in business magazines about International Product promotion adopted by business units in India.
- From the magazine try to acquire conceptual clarity on transfer pricing and dumping.
- Visit any institution responsible for export promotion and evaluate the functioning with reference to defined objectives.

BOOKS FOR REFERENCE:

1. Francis Cherunilum, *International Marketing*.
2. B.L. Varshney and B. Bhattacharya, *International Marketing management*.
3. P.G.Apte, *International Financial Management*.
4. Somanatha : *International Financial Management*, I.K. International
5. Mohd. Akbar ali Khan : *International Trade and Finance*
6. Philip R. Cateoria, *International Marketing*.
7. B.S. Rathore & J.S. Rathore, *International Marketing Management*.
8. M.L. Verma, *Foreign Trade and Management in India*.
9. Dana – Nicoleta Lasclu, *International Marketing, Biztantra*.
10. Srivasthava, *International Marketing*.
11. P.K. Vasudeva: *International Marketing, Excel Books*

5.7 INTERNATIONAL FINANCIAL MANAGEMENT

UNIT – 1: International Finance:

8 Hours

Introduction; Meaning of International Finance; Issues involved in International business & Finance; Currency to be used; Credit worthiness; Methods of Payment; Foreign Exchange Markets.

UNIT – 2: International Financial Management:

10 Hours

Meaning of International Financial Management; Scope and significance of International financial management in international markets.

UNIT – 3: Foreign Exchange rates:

12 Hours

Need for foreign exchange; Foreign exchange market and Market intermediaries; Exchange rate determination; Foreign Exchange risk - Forwards, futures, swaps, options, Valuation of future and swaps- valuation of options and efficiency of the exchange market; Convertibility of a rupee and its implications.

UNIT – 4: International Financial Markets:

10 Hours

Foreign Institutional Investors- Regulations governing Foreign Institutional Investors in India; Global Depository Receipts - Meaning; Foreign Direct investment (FDI) – growth of FDI; Advantages and Disadvantages of FDI to Host country and home country.

UNIT– 5: International Risk Management:

8 Hours

Types of Risk – Political, commercial, exchange control restrictions on remittances, differing tax system, sources of funds, exchange rate fluctuations, different stages and rates of inflation, risks of non-payment; Managing Risk. Internal and external technologies.

SKILL DEVELOPMENT:

- Visit any authorized dealers establishment and understand the activities of dealing room
- Analyse the trend of FDI into India during the preceding five years.

BOOKS FOR REFERENCE:

1. Avadhani: *International Financial Management*
2. Mittal, *International Rate Foreign Exchange Tariff policy*
3. Venkataraman K.V, *Finance of Foreign Trade and Foreign Exchange*
4. Genaro C da costa; *International Trade and Payments*
5. Chowdery, *Finance of Foreign Trade and Foreign Exchange*
6. Balachandran, *Foreign Exchange.*
7. Somanath : *International Financial Management, I.K. International*
8. Srivastava, *International Finance.*
9. Madhu Vij; *International Financial Management 3rd Edition.*

6.5 INTERNATIONAL HRM

UNIT – 1: Globalization and Human Resource Management- 10 Hours
Introduction – Impact on employment- impact on HRD, Impact on Wages & Benefits, Impact on Trade Unions, Impact on Collective Bargaining, Impact on Participative management and Quality Circles, Managing Diversified cultures.

UNIT – 2: Total quality management and HRM 6 Hours
Introduction, Principles and core concepts of TQM, HRM and TQM, the Total quality HR strategy.

UNIT – 3: Recent Techniques in HRM 14 Hours
Employees for lease, Moon lighting by employees – Blue moon to full moon, Dual career groups, Flexitime and Flexiwork, Training and Development – Organization's Educational Institutes, Management Participation in Employee's Organization, Consumer Participation in Collective Bargaining, Collaborative Approach, Employee's Proxy, HR accounting, Organizational Politics, Exit Policy and Practice, Future of HRM.

UNIT – 4: Managing HR in an International Business 10 Hours
Introduction – The internationalization of Business - Improving international assignments through selection - Diversity counts- sending women managers abroad - Training and maintaining international employees.

UNIT – 5: HR Records, Audit, Research and Information system 10 Hours
HR Records, HR Audits, HR Research, HR Information System, HR philosophy and building employee commitment.

SKILL DEVELOPMENT:

- Understand the concept of TQM in HR.
- Visit any establishment of MNCs and understand the training requirements of Manpower in the global context.

BOOKS FOR REFERENCE:

1. Subba Rao, *International Human Resource Management*
2. Shaun Tyson, *Strategic Prospects HRM*.
3. Peter J. Dowling & Others, *International Human Resources Management*.
4. Sengupta/Bhattacharya; *International Human Resources Management*.

6.6 EXIM & FOREX MANAGEMENT

OBJECTIVE

To enable the students to acquire skills in Exim & Forex Management.

Unit 1: FOREIGN EXCHANGE MARKET

12 hrs

The Foreign Exchange Market, Structure and Organization – Mechanics of Currency Trading – Types of Transactions and Settlement Dates – Exchange Rate Quotations and Arbitrage – Arbitrage with and without Transaction Costs – Swaps and Deposit Markets – Option Forwards – Forward Swaps and Swap Positions – Interest Rate Parity Theory.

Unit 2: MARKET FUTURE

12 hrs

Currency and Interest Rate Futures, Future Contracts, Markets and Trading Process, Future Prices Spot and Forward, Hedging and Speculation with Currency Futures – Interest Rate Futures – Foreign Currency Options – Option Pricing Models – Hedging with Currency Options – Future Options – Innovations.

Unit 3: EXCHANGE RATE

12 hrs

Exchange Rate Determination and Forecasting – Setting the Equilibrium Spot Exchange Rate – Theories of Exchange Rate Determination – Exchange Rate Forecasting.

Unit 4: RISK MANAGEMENT

12 hrs

Foreign Exchange Risk Management – Hedging, Speculation and Management of Transaction Exposure – Using Forward Markets for Hedging – Hedging with Money Market, Currency Options and Currency Futures – Internal Hedging Strategies – Speculation in Foreign Exchange and Money Markets.

Unit 5: RATE MANAGEMENT

12 hrs

Management of Interest Rate Exposure – Nature and Measurement – Forward Rate Agreements (FRA's) Interest Rate Options, Caps, Floors and Collars, Cap and Floors – Options on Interest Rate Futures, Some Recent Innovations – Financial Swaps.

BOOKS FOR REFERENCE

- 1) Shapiro Alan. C., *Multinational Financial Management*. Prentice Hall, New Delhi
- 2) Chaudhuri & Agarwal: *Foreign Trade and Foreign Exchange*, HPH
- 3) Apte P.G., *International Financial Management*, Tata McGraw Hill, New Delhi
- 4) Jain : *Export Import Procedures and documentation*
- 5) Mcrae T.N and D.P Walkar, *Foreign Exchange Management*, Prentice Hall.
- 6) Evilt H.E., *Manual of Foreign Exchange*.
- 7) Holgate H.C.F, *Exchange Arithmetic*
- 8) Rajwade A.V., *Foreign Exchange Risk Management*, Prentice Hall of India.
- 9) A. Kumar; *Export and Import Management*.

INFORMATION & TECHNOLOGY GROUP

5.6 ACCOUNTING INFORMATION SYSTEMS

Objective:

Accounting Information Systems is concerned with the way computerized information systems impact how accounting data is captured, processed, and communicated. It introduces the technology, procedures, and controls that are necessary in modern accounting field.

Unit – 1 :The Information System: An Accountant’s Perspective **10 hours**
The Information Environment - What Is a System? An Information Systems Framework, AIS Subsystems, A General Model for AIS, Acquisition of Information Systems Organizational Structure - Business Segments, Functional Segmentation, The Accounting Function, The Information Technology Function
The Evolution of Information System Models - The Manual Process Model, The Flat-File Model, The Database Model, The REA Model, Accountants as System Designers, Accountants as System Auditors

Unit – 2 : Introduction to Transaction Processing **10 hours**
An Overview of Transaction Processing - Transaction Cycles, The Expenditure Cycle, The Conversion Cycle, The Revenue Cycle , Accounting Records - Manual Systems, The Audit Trail, Computer-Based Systems, Documentation Techniques - Data Flow Diagrams and Entity Relationship Diagrams Flowcharts , Record Layout Diagrams, Computer-Based Accounting Systems - Differences between Batch and Real-Time Systems , Alternative Data Processing Approaches, Batch Processing Using Real-Time Data Collection, Real-Time Processing.

Unit – 3 : Computer-Based Accounting Systems **10 hours**
Automating Sales Order Processing with Batch Technology, Keystroke, Edit Run, Update Procedures, Reengineering Sales Order Processing with Real-Time Technology, Transaction Processing Procedures, General Ledger Update Procedures, Advantages of Real-Time Processing, Automated Cash Receipts Procedures, Reengineered Cash Receipts Procedures, Point-of-Sale (POS) Systems, Daily Procedures, End-of-Day Procedures, Reengineering Using EDI, Reengineering Using the Internet. Control Considerations for Computer-Based Systems. PC-Based Accounting Systems - PC Control Issues.

Unit – 4 : Financial Reporting and Management Reporting Systems **15 hours**
Data Coding Schemes - A System without Codes, A System with Codes, Numeric and Alphabetic Coding Schemes, The General Ledger System, The Journal Voucher, The GLS Database, GLS Procedures, The Financial Reporting System - Sophisticated Users with Homogeneous, Information Needs, Financial Reporting Procedures, Controlling the FRS. The Management Reporting System, Factors that Influence the MRS, Management Principles, Management Function, Level, and Decision Type Problem Structure, Types of Management Reports, Responsibility Accounting , Behavioral Considerations.

Unit-5:Computer Controls and Auditing IT Controls And Accounting Package **15 hours**
Relationship between IT Controls and Financial Reporting, Audit Implications of Sections **IT Governance Controls, Organizational Structure Controls**, Segregation of Duties within the Centralized Firm, The Distributed Model, Creating a Corporate IT Function, Audit Objectives Relating to Organizational Structure, Audit Procedures Relating to Organizational Structure. Tally software and it uses with problems

References:

- 1. Accounting Information Systems, 11/E Marshall B. Romney, Paul J. Steinbart, Arizona State University, Prentice Hall**
- 2. The Crossroads of Accounting and IT** Donna Kay, Ali Ovliia, May 2011, Hardback,
- 3. Accounting Information Systems International Edition 10th Edition George Bodnar, William Hopwood Aug 2009,**

5.7 ENTERPRISE RESOURCE PLANNING

Objectives:

This paper will orient students to understand that business processes can be integrated in a seamless chain.

UNIT 1: INTRODUCTION

10 hours

Introduction To ERP, Evolution of ERP, What is ERP? Reasons for the growth of ERP, Scenario and Justification of ERP in India, Evaluation of ERP, Various Modules of ERP, Advantage of ERP.

UNIT 2: ERP ENVIRONMENT

10 hours

An overview of Enterprise, Integrated Management Information, Business Modeling, ERP for Small Business, ERP for make to order companies, Business Process Mapping for ERP Module Design, Hardware Environment and its Selection for ERP Implementation.

UNIT 3: ERP RELATED TECHNOLOGIES

10 hours

ERP and Related Technologies, Business Process Reengineering (BPR), Management Information System (MIS), Executive Information System (EIS), Decision support System (DSS), Supply Chain Management (SCM)

UNIT 4: ERP MODULES

10 hours

ERP Modules, Introduction to Finance, Plant Maintenance, Quality Management, Materials Management, HR, Marketing

UNIT 5: ERP Market

10 hours

ERP Market, Introduction, SAP AG, Baan Company, Oracle Corporation, People Soft, JD Edwards World Solutions Company, System Software Associates, Inc. (SSA) QAD, A Comparative Assessment and Selection of ERP Packages and Modules.

Skill Development:

Prepare a list of companies that provide ERP packages and their features.

BOOKS FOR REFERENCE:

1. *Enterprise Resource Planning* : Alexis Leon, Leon Publishers
2. *"Managing Business Process Flows* : Ravi Anupindi, Suni Chopra,
3. *Pearson Education".*
4. *Enterprise Resource Planning* : Altekhar, PHI.
5. *Enterprise Resource Planning* : Srivatsava, I.K Intl
6. *Enterprise Resource Planning* : Zaveri Jyotindra
7. *Enterprise Resource Planning* : C.S.V Murthy
8. *ERP* : Vinod Kumar Garg and N.K.
Venkitakrishnan, PHI.
9. *Introduction to SAP, an Overview of SD* : MM, PP, FI/CO Modules of SAP.
10. *Enterprise Resource Planning* : P. Diwan:

6.5 INFORMATION TECHNOLOGY AND AUDIT

OBJECTIVE: This subject aims at imparting knowledge about auditing done with the use of information technology

Unit 1: INTRODUCTION TO AUDITING SOFTWARE **10 Hrs**

Introduction – Meaning - Definition -- Preparation of Audit Working Papers –Tally ERP 9 Auditors Edition: Introduction, features, characteristics – Tally.Net: features – requirements for remote connectivity – Access information via SMS, Safeguard Data – Automated Backup and Recovery.

Unit 2: AUDIT OF SUBSIDIARY BOOKS **10 Hrs**

Cash book: Checking of Receipts and Payments, vouchers, Checking of Bank Transaction, BRS. Petty cash transaction: sales day book, purchase day book, sales return book, Purchase Return Book, Bills Receivable book, Bills payable book.

Unit 3: AUDIT OF FINANCIAL STATEMENTS **12 Hrs**

Configuring profit/Loss account, display profit/loss account, Audit of profit/loss account, Configuring balance sheet, display the balance sheet, Display balance sheet with different stock valuation methods, setting closing stock manually in the balance sheet. Balance sheet of joint stock companies.

Unit 4: TAX AUDIT **12 Hrs**

Extracting financial and quantitative information required for Tax Audit (under Sec. 44AB), Displaying relevant data for Audit based on Clause requirement, Instant Statistics on Audit Listings (Audited Vouchers & Unaudited Vouchers), record Audit Remarks using Audit Notes, Provision to mark Vouchers for Clarification / Verification from Clients, Provides facility to post corrections and reviews remotely, Tracking any alteration / modification to vouchers post Audit, Generate Annexure to Form 3CD, Printing of Form 3CD along with Annexure I and II, Printing of Form 3CA and Form 3CB

Unit 5: STATUTORY AUDIT **10 Hrs**

Creation and maintenance of Audit Programme, create the Audit Programme as pre audit activity, Supports to prepare and maintain **Audit Working Papers**, Facility to mark the applicable and compiled **Accounting Standards** for a company. Extracting the financial information required for Statutory Audit, Displaying the relevant data in the required form for analysis, Audit the Vouchers along with instant statistics, Track and audit the Related Party. Mechanism to Audit and interact with the Client remotely, generate the following Financial Statements as per the format specified in Company's Act: Schedule VI Balance Sheet, Schedule VI P&L Statement.

SKILL DEVELOPMENT:

- Maintain a computer record and execute the problems

BOOKS FOR REFERENCE:

1. *Learning Tally ERP 9, Vishnu Pratap Singh, Computech publications limited, 3rd Revised edition.*
2. *Guide to Tally 9, Law Point,*
3. *Tally Ver 9, C Nellai Kannan, Nels publication, ISBN 81-901408-2-5*

6.6 BANKING TECHNOLOGY AND MANAGEMENT

OBJECTIVE

The objective of this course is to acquaint students with the banking technology and their recent developments. Also it will enhance the students with live picture of modern banking concepts and Techniques.

Unit 1: BRANCH OPERATION AND CORE BANKING

10 Hours

Introduction and evolution of bank management – Technological impact in banking operation – Total branch computerization – Concept of opportunities – Centralized banking – Concept, opportunities, challenges and implementation

Unit 2: DELIVERY CHANNELS

10 Hours

Over of delivery channels – Automated Teller machine (ATM) – Phone banking – call centers – Internet banking – Mobile banking – Payment gateways – Card technologies – MICR electronic clearing

Unit 3. BACK OFFICE OPERATIONS

10 Hours

Bank back office management – Inter branch reconciliation – Treasury management – Forex operations – Risk management – Data center management – Network management – Knowledge management (MIS/DSS/EIS) – Customer relationship management (CRM).

Unit 4. INTER BANK PAYMENT SYSTEM

10 Hours

Interface with payment system network – structured financial messaging system – Electronic fund transfer – RTGSS – Negotiated dealing systems and securities settlement systems – Electronic Money – E-cheques.

Unit 5. CONTEMPORARY ISSUES IN BANKING TECHNIQUES

10 Hours

Analysis of Rangarajan committee reports – E Banking budgeting – Banking software's.

REFERENCES

1. Kaptan S S & Choubey N S, "E-Indian Banking in Electronic Era", Sarup & Sons, New Delhi.
2. Padwal & Godse: Transformation of Indian Banks with Information Technology HPH
3. Vasudeva, "E-Banking", Common Wealth Publishers, New Delhi, 2005.
4. Chandramohan : Fundamental Computer Network, I.K. International
5. Effraim Turban, Rainer R. Kelly, Richard E.Potter, "Information Technology", John Wiley & Sons Inc, 2000.
6. Andrew S. Tanenbaum, "Computer Networks", Tata Mcgraw Hill, 3rd Edition, 2001

BANGALORE UNIVERSITY



REGULATIONS, SCHEME AND SYLLABUS

for the BCA course (I to VI Semesters)

(Syllabi of first two semesters and regulation approved earlier by BOS, Faculty of Science and Academic Council. Assent of the Chancellor for the same has also been obtained by the University)

(Syllabi of III to VI semesters approved in the BOS dt. 08.09.08)

BACHELOR OF COMPUTER APPLICATIONS (BCA)

(Semester System- Y2K8 scheme)

Revised w. e. f. Academic Year 2008– 2009

Copy for the Controller

[Signature]
03/5/12

PROCEEDINGS OF THE BOARD OF STUDIES MEETING IN MASTER OF COMPUTER APPLICATIONS (UG & PG) HELD IN THE MCA PROGRAMME ON 8.09.08.

The following members attended the meeting:

1. Prof. Pradeep G. Siddheshwar	Chairman	<i>Siddheshwar</i>
2. Mr. B.L. Muralidhara	Member	<i>B.L. Muralidhara</i>
3. Mr. M. Hanumanthappa	Member	<i>M. Hanumanthappa</i>
4. Mr. M.T. Somashekara	Member	<i>M.T. Somashekara</i>
5. Dr. Gopalakrishna D	Member	<i>Gopalakrishna D</i>
6. Dr. J.N. Singh	Member	<i>J.N. Singh</i>
7. Sri. Srinivasa A	Member	<i>Srinivasa A</i>
8. Dr. Rama	Member	<i>Rama</i>
9. Sri. Gundu Rao	Member	<i>Gundu Rao</i>
10. Sri. Manjunatha	Member	<i>Manjunatha</i>
11. Smt. Pratibha Kalburgi	Member	<i>Pratibha Kalburgi</i>

Dr. K. Narayanamurthy, Dr. Hemanth Kumar, Dr. B.V. Dhandra and Dr. Vishwakaryagadde could not attend the meeting

The committee discussed the following matters and made resolutions as indicated below:

1. The BCA Syllabi of III to VI semesters (Y2K8 Scheme) were discussed and finalized by the BOS.
2. The BOS recommended that remission be given on the Indian Constitution paper to students of third semester BCA (Y2K7 Scheme) as these students have studied the same in the first semester itself.
3. The BOS approved, with modification of format, the Ph.D. synopsis of the following students:
 - a. M.T. Somashekara
 - b. Hegde Chetana Laxminarayana
 - c. Ashoka S.B.

The BOS authorized the Chairman to look into the modified synopsis to be submitted by the students and transmit the same to the University.

4. The BOS deferred the matter of revision of M.Sc. (Computer Science) and MCA Syllabi to the next BOS meeting.
5. The Panel of Examiners for UG (B.Sc. / BCA) and PG (M.Sc. / MCA) was prepared and approved by the BOS.
6. The BOS recommended that M.Phil in Computer Science may be introduced from 2010-2011 as the department would be better equipped to handle a new course at that time.

Siddheshwar

CHAIRMAN
BOS IN CS(UG & PG)

Regulations, Scheme of Study and Examination for B.C.A. degree course under Semester System (Y2K8 scheme) (Revised w.e.f. 2008– 2009)

- R 1.** a) Title of the course: Bachelor of Computer Applications
b) Duration of the Course: The course shall be of three years duration spread over six semesters.
c) Scheme of study:
i) There shall be five theory papers and two practicals from first semester to fourth semester. The practical paper corresponds to one or two theory papers. The papers having no practical component carry 100 marks (90+10) and the papers carrying practical component also carry 100 marks (60+30+10).
ii) There shall be four theory papers and one project work during fifth and sixth semesters.
iii) The project work shall be carried out either independently or jointly (maximum of three students).
iv) Medium of Instruction: The medium of instruction shall be English.
d) Scheme of Examination:
i) At the end of each semester there shall be University examination of three hours duration in each of the theory paper/practical.
ii) Continuous Evaluation (CE) carrying 10 marks in each of theory papers shall be based on the performance of the students in two written tests of one hour duration. No minimum marks for passing is required in IA.
iii) At the end of the fifth and sixth semesters each student shall have to submit the completed project report for the evaluation which shall be certified by internal and/external guide and duly signed by the Principal/Chairman/Head/Course Coordinator.

The project report shall be evaluated by two examiners for 100 marks and Viva-voce shall carry 100 marks.

- R 2.** Each semester shall be of 4 months duration
R 3. Attendance: As per Bangalore University regulations in force for science degree courses.
R 4. A Candidate is allowed to carry over all the previous unleared (failed) theory papers and/Practicals to subsequent semesters as per Bangalore University regulations in force for science degree courses.
R 5. The maximum period for completion of the course shall be six years from the date of admission.
R 6. Eligibility for admission:
a) Any student who has passed PUC – II Science, Arts or Commerce securing a minimum of 35% of marks

OR

- b) Any student who has passed JODC or Diploma in Engg. (of three year duration of Govt. of Karnataka) with minimum of 35% of marks in aggregate in all the semesters/years.
R 7. Admission Procedure:
a) Through Counseling in respective colleges
b) 50% weightage for entrance test in respective colleges
c) 50% weightage for performance at qualifying examination.
d) Merit list shall be prepared based on item No. 7(b) and 7 (c)

- e) Reservation: As per the notifications/Govt. orders from the University/Govt. from time to time.
- f) Tuition and other fees: As fixed by the University from time to time

R 8. The total number of students to be admitted to the course shall be as decided by the University.

R 9. Results: Results of candidate shall be declared and the classes awarded as per the procedure followed by the University for B.Sc. courses.

R 10. POWER TO REMOVE DIFFICULTIES

- 1) If any difficulty arises in giving effect to the provisions of these regulations, the Vice – Chancellor may by order make such provisions not inconsistent with the Act, Statutes, Ordinances or other Regulations, as appears to be necessary or expedient to remove the difficulty.
- 2) Every order made under this rule shall be subject to ratification by the appropriate University Authorities.

**Title of Papers and Scheme of Study & Examination for BCA
(Bachelor of Computer Applications) Revised w.e.f. 2008-2009**

Sem.	Paper	Title of the paper	Hrs/ Wk	Theory	Practical	CE	Total Marks
				Max. Marks	Max. Marks		
I	BCA101	Indian Language					
	BCA102	English	4	90	-	10	100
	BCA103	Computer Fundamentals	4	90	-	10	100
	BCA104	Electronics	4	90	-	10	100
	BCA105	Programming Concepts Using C	4	60	30	10	100
II	BCA201	Indian Language	4	60	30	10	100
	BCA202	English	4	90	-	10	100
	BCA203	Mathematics	4	90	-	10	100
	BCA204	OOPS Using C++	4	90	-	10	100
	BCA205	Data Base Management Systems	4	60	30	10	100
III	BCA301	Indian Language	4	60	30	10	100
	BCA302	English	4	90	-	10	100
	BCA303	Indian Constitution	4	90	-	10	100
	BCA304	Operating Systems	4	100	-	-	100
	BCA 305	Data Structures Using C	4	90	-	10	100
	BCA306	Numerical Analysis and Linear Programming	4	60	30	10	100
IV	BCA401	Indian Language	4	60	30	10	100
	BCA402	English	4	90	-	10	100
	BCA403	Environmental Studies	4	90	-	10	100
	BCA404	Data communications and Networks	4	90	-	10	100
	BCA405	Visual Programming	4	90	-	10	100
	BCA406	UNIX Programming	4	60	30	10	100
V	BCA501	Software Engineering	4	60	30	10	100
	BCA502	Computer Architecture	4	90	-	10	100
	BCA503	Banking and insurance	4	90	-	10	100
	BCA504	JAVA Programming	4	90	-	10	100
	BCA505	Project	4	60	30	10	100
	BCA 506	Soft Skills & Personality Development Lab	-	-	90	10	100
VI	BCA601	Design & Analysis of Algorithms	4	90	-	10	100
	BCA602	Systems Programming	4	90	-	10	100
	BCA603	Computer Graphics	4	90	-	10	100
	BCA604	Web Programming	4	90	-	10	100
	BCA 605	Project	4	60	30	10	100
			8	-	180	20	200

- Note:**
- 1) The practical classes during the course of the semester shall be as in other science courses.
 - 2) Examination for Theory/Practicals shall be of three hours duration.
 - 3) In the evaluation of projects in fifth and sixth semesters, during the practical examination the demonstration of the project carries 50% of marks and viva-voce carries 40% of marks.
 - 4) The papers should be taught only by people who have specialization in the area.
 - 5) For theory papers the paper number may be suffixed with T and for practical papers with P, e.g., 604T and 604P.
 - 6) The question paper pattern and mode of evaluation to be as finalized earlier for I and II semester BCA. Any further requirement in the matter may be decided by the Chairman, BOS in consultation with BOS members.

FIRST SEMESTER
BCA101T - INDIAN LANGUAGE

Syllabus as per the one prescribed for science courses of Bangalore University

BCA102T - ENGLISH

Syllabus as per the one prescribed for science courses of Bangalore University

BCA103T - COMPUTER FUNDAMENTALS

Syllabus as per the one prescribed for science courses of Bangalore University

BCA104T - ELECTRONICS

Introduction to network theorems and AC fundamentals **8 HOURS**

Ohm's law: Statement, explanation. **Kirchhoff's law:** Statement & explanation of KCL and KVL. **Mesh/loop analysis** (up to 2 loops) and **node voltage method**, numerical problems. **Delta/star & star/delta transformation:** No derivations for inter-conversion equations, Introduction of network, port of network (one port network, two port network), unilateral network, bilateral network, linear network. Need for application of network theorems. (DC Circuits only). **Superposition theorem:** Statement, (Only with TWO voltage sources) steps to apply the theorem, explanation by considering a simple resistive network and problems. **Thevenin's theorem:** Statement, (Only with ONE voltage source) steps to apply the theorem, explanation by considering a simple resistive network and problems. **Norton's theorem:** Statement, (Only with ONE voltage source) steps to apply the theorem, explanation by considering a simple resistive network and problems. **Maximum power transfer theorem:** Statement, explanation of theorem by considering a simple resistive network, expression for maximum power delivered ($P_{L(max)} = V_{th}^2/4R_{th}$) (no derivation), graph of R_L Vs P_L , numerical problems and applications. **Reciprocity theorem:** Statement, explanation using resistive network with dc source and numerical problems. **AC Fundamentals:** Representation of ac sine wave, instantaneous value, peak value, peak to peak value, average value, r.m.s value, cycle, time period, frequency. (No derivations, only mention the expressions) Representation of non sinusoidal waves.

SEMICONDUCTOR DEVICES **12 HOURS**

Introduction, atomic structure, energy level, energy band diagram in solids, classification of conductors, insulators and semiconductors. **Semiconductor**, properties, crystal structure of semiconductor, types-intrinsic and extrinsic semiconductor. **Intrinsic Semiconductor:** Crystal structure (Ge & Si), thermally generated charges (electron & holes) carriers, the effect of temp on their motion. **Extrinsic Semiconductor:** Doping, donor, acceptor impurities, n-type, p-type semiconductor, majority & minority carriers, their currents, concept of immobile ions. **Semiconductor devices:** PN junction diode, formation of pn junction, depletion layer, potential barrier, energy level diagram of pn junction, Biasing of pn junction, behavior of pn junction under forward and reverse biasing, break down in pn junction, avalanche and zener break down. **Diode characteristics:** V-I characteristics, forward and reverse bias, diode parameters, bulk resistance, knee voltage, static and dynamic resistance, PIV. **Application of diode:** As a rectifier, as logic gate, as a switch, etc. **Rectifier:** Types, Half wave, Full wave. **Half wave rectifier:** Circuit, working, wave forms and expression for ripple factor and efficiency (no

derivation), advantages & disadvantages. **Full wave rectifier:** Center tapped rectifier, Circuit, working, wave forms and expressions for ripple factor and efficiency (no derivation), advantages & disadvantages. **Bridge wave rectifier:** Circuit, working, wave forms and expressions for ripple factor and efficiency (no derivation), advantages & disadvantages. **Logic families:** Scale of integration, Digital IC's, classifications, DTL, TTL, ECL, MOS, CMOS, **Mention of features:** speed of operation, power dissipation, propagation delay, fan-in, fan-out.

NUMBER SYSTEMS

12 HOURS

Introduction to number systems – positional and non-positional, Base/ Radix. Decimal number system – Definition, digits, radix/base. Binary number system – Bit, Byte, **Conversions:** Binary to Decimal and Decimal to Binary. Octal number system – Conversion from Octal to Decimal, Decimal to Octal, Octal to Binary and binary to Octal. Hexadecimal number system-Conversions: Decimal to Hex, Hex to decimal, Hex to Binary, Binary to Hex, Octal to Hex, Hex to Octal. Binary arithmetic- binary addition, subtraction, multiplication and division (only Integer part). 1's and 2's complement – 2's complement subtraction. **Binary codes:** BCD numbers, 8421 code, 2421 code- examples and applications. **Gray code-** Conversions- Gray to binary and Binary to Gray, application of gray code (Mention only). **Excess – 3 code** - Self complementing property and applications. Definition and nature of **ASCII code**. Introduction to **error detection and correction code**, parity check. **Boolean algebra:** - Laws and Theorems.

AND, OR, NOT Laws, Commutative law, associative law, distributive law, Duality theorem. **Demorgan's theorems** – Statements, proof using truth tables; Simplification of Boolean expressions using Boolean laws. Definition of product term, sum term, minterm, maxterms, SOP, standard SOP, POS and Standard POS. Conversion of Boolean expression to Standard SOP and Standard POS forms. Karnaugh maps- Definition of Karnaugh map, K- map for 2, 3 and 4 variables. Conversion of truth tables into k-map, grouping of cells, redundant groups and don't care conditions. Karnaugh map technique to solve 3 variable and 4 variable expressions. Simplification of 3 and 4 variable Boolean expression using K-maps (SOP only).

LOGIC GATES

12 HOURS

AND Gate: Definition, symbol, truth table, timing diagram, Pin diagram of IC 7408. OR Gate: Definition, symbol, truth table, timing diagram, Pin diagram of IC 7432. NOT Gate: Definition, symbol, truth table, timing diagram, Pin diagram of IC 7404. NAND Gate: Definition, symbol, truth table, Pin diagram of IC 7400. NOR Gate: Definition, symbol, truth table, timing diagram, Pin diagram of IC 7402. Exclusive OR Gate: Definition, symbol, truth table, timing diagram, applications, Pin diagram of IC 7486. Exclusive NOR Gate: Definition, symbol, truth table, timing diagram. Combinational logic circuits: Definition, applications. Half Adder: Symbol, Logic circuits using XOR and basic gates, Truth table. Full Adder: Symbol, Logic circuits using XOR and basic gates, Truth table. Half Subtractor: Symbol, Logic circuits using XOR and basic gates, Truth table. Full Subtractor: Symbol, Logic circuits using XOR and basic gates, Truth table. Adder - Subtractor: Logic circuit, pin diagram IC 7483, IC 7486. Parallel Adder: 4 - bit parallel binary adder, BCD adder, IC 7483. NAND - NOR implementation of Adders.

SEQUENTIAL CIRCUITS

10 HOURS

Importance of clock in digital circuit and introduction to flip flop. Flip-flop-difference between latch and flip-flop. Qualitative study of level and edge triggering. RS latch/unlocked, symbol and truth table. RS flip-flop using NAND gate, symbol, truth table and timing diagram. D flip-flop-Logic symbol, RS flip-flop as a D flip flop, truth table and timing diagram. J-K flip-flop- Symbol, truth table, Realization of JK flip-flop using NAND gates, working, and timing diagram. Race around condition, preset and clear inputs, pin diagram of IC 74112. T flip flop - Logic symbol, JK flip flop as a T flip-flop, truth table and timing diagram. Master slave flip flop: Logic circuit, truth table and timing diagram, advantage of M/S flip flop, pin diagram of IC 7473, IC 7476. Registers: Definition, types of registers - Serial in serial out, Serial in parallel out, Parallel in serial out, Parallel in parallel out shift register (Block diagram representation for each), truth table, timing diagram and speed comparison.

BCA104P - PRACTICALS IN ELECTRONICS

List of experiments - (At least 10 experiments to be conducted)

- 1) Study of Logic Gates- AND, OR, NOT, NAND, NOR, XOR. (using respective ICs)
- 2) Realization of AND, OR and NOT gates using Universal Gates.
- 3) Design and Realization of Half Adder/Subtractor using NAND Gates.
- 4) Design and Realization of Full Adder using Logic Gates.
- 5) Design and Realization of 4 bit Adder/Subtractor using IC 7483.
- 6) Design and Realization of BCD Adder using IC 7483.
- 7) Realization of R-S flip flop using NAND gates.
- 8) Realization of J-K flip flop using IC 7400 and 7410.
- 9) Realization of T and D flip flop using IC 7476.
- 10) Implementation of SISO Shift Registers using flip flops (IC 7476).
- 11) Implementation of SIPO Shift Registers using flip flops (IC 7476).
- 12) Implementation of PISO Shift Registers using flip flops. (IC 7476).
- 13) Implementation of PIPO Shift Registers using flip flops. (IC 7476).
- 14) Implementation of Half wave and Full wave rectifier using Semiconductor diode. (Ripple factor)
- 15) Design and implementation of odd and even parity checker Generator using IC 74180.

BCA105T – PROGRAMMING CONCEPTS Using C

Total: 52 Hrs

- 1.0 **Computer Programming** : Basic Programming concepts - Algorithm, Flowcharts, Modular Programming and structured programming. (3 Hrs)
- 2.0 **'C' PROGRAMMING**
 - 2.1 Problem solving using Computers, Concept of flowcharts and algorithms (5 Hrs)
 - 2.2 **Overview of C** : Introduction, Importance of 'C', Sample 'C' Programs, Basic structure of 'C' programs, Programming style, Executing a 'C' Program. (3 Hrs)

- 2.3 Constants, Variables and Data types :** 'C' Tokens, keywords, and identifiers, constants, variables, datatypes, declaration of variables, assigning values to variables, defining symbolic constants. (3 Hrs)
- 3.0 Operators and expression :** Arithmetic operators, Relational operators. Logical operators, Assignment operators, increment and decrement operators, conditional operators, bitwise operators, special operators, some computational problems, type conversion in expressions, operator precedence and associativity. Mathematical functions. (5 Hrs)
- 3.1 Managing input and output operators :** Input and Output statements, reading a character, writing characters, formatted input, formatted output statements. (3 Hrs)
- 3.2 Decision making, Branching and looping :** Decision making with IF statement, simple IF statement, The IF-ELSE statement, nesting of IF .. ELSE statements, The ELSE -IF ladder, The switch statement, The?: operator, The GOTO statement, The WHILE statement, The DO statement, The FOR statement, jumps in loops. (6 Hrs)
- 4.0 Arrays :** One dimensional arrays, Two-dimensional arrays, initializing two-dimensional array, Multidimensional arrays. (5 Hrs)
- 4.1 Handling of character strings :** Declaring and initializing string variables, reading string from terminal, writing string to screen, arithmetic operations on characters, putting strings together. Comparison of two strings, string handling functions-strlen, strcat, strcmp, strcpy (5 hrs)
- 5.0 User defined functions :** Need for user-defined functions, a multi-functional program, the form of 'C' function, Return values and their types, calling a function, category of functions- No arguments and no return values, arguments but no return values, arguments with return values, handling of non-integer functions, nesting of functions, recursion, functions with arrays. (4 Hrs)
- 6.0 Structure and union :** Structure definition, giving values to members, structure initialization, comparison of structure variables, array as structure, array within structure, union. (5 Hrs)
- 7.0 Pointers :** Understanding pointers, accessing the address of variables, declaring and initializing pointers, accessing a variable through its pointer. (3 Hrs)

Text books :

1. E.Balaguruswamy. : *Programming in ANSI C* Tata Mc Graw-Hill (1998)
2. Kamthane, *Programming with ANSI and Turbo C*. Pearson Education 2003

References :

1. V.Rajaraman.: "Fundamentals of Computers", PHI (EEE) (1999)
2. V.Rajaraman.: "Programming in C ", PHI (EEE) (2000)
3. S.ByronGottfried. : "Programming with C", Tata McGraw-Hill(2000)
4. Yashawant Kanetkar : "Let us C"
5. Rajesh Hongal : "Computer Concepts & C language"
6. Brain verminghan & Dennis M. Ritchie "ANSI C Programming " (PHI)
7. Ramkumar & Rakesh Aggarwal "ANSI C Programming" Tata McGraw Hill
8. Kernighan, C – Programming Language ANSI C Version. Pearson Education.
9. Venkateshmurthy, *Programming Techniques through C*. Pearson Education.
10. E. Balaguruswamy – *Computer Fundamentals and C Programming*. TMH 2008
11. Bronson : *ANSI C Programming , 1st Edition, 2008* Cengage Learning India
12. Forouzan : *Computer Science A Structured Programming Approach Using C 3rd Edition*, Cengage Learning India

BCA105P - PRACTICALS IN C PROGRAMMING

List of programs

PART A

- 1) Write a Program to find the root of the given quadratic equation using switch case.
- 2) Write a C Program to generate and print first N FIBONACCI numbers.
- 3) Write a Program to find the GCD and LCM of two integer numbers
- 4) Write a C Program that reverse a given integer number and check whether the number is palindrome or not.
- 5) Write a Program to find whether a given number is prime number or not
- 6) Write a C Program to input numbers and to find mean variance and standard deviation.
- 7) Write a C Program to read two matrices and perform addition and subtractions of two matrices.
- 8) Write a C Program to read a string and check whether it is palindrome or not.
- 9) Write a Program to find the factorial of a number using function

PART B

- 10) Write a C Program to find if a character is alphabetic or numeric or special character.
- 11) Write a C Program to compute the sum of even numbers and the sum of odd numbers using a function.
- 12) Write a C Program to find trace and normal of a square matrix using functions.
- 13) Write a C Program to accept a sentence and convert all lowercase characters to uppercase and vice-versa.
- 14) Write a Program to accept different goods with the number, price and date of purchase and display them.
- 15) Write a C Program to find the length of a string without using the built-in function.
- 16) Copying the contents of one file into another.
- 17) Write a C program to accept the reverse of a string using pointers.

Note : The list of programs has been divided into two parts for the sake of practical examination in which two programs are to be given one from each part.

SECOND SEMESTER

BCA201T – INDIAN LANGUAGE

Syllabus as per the one prescribed for science courses of Bangalore University.

BCA202 T- ENGLISH

Syllabus as per the one prescribed for science courses of Bangalore University

BCA203T – MATHEMATICS

Total: 52 hrs

1. **Matrices:** Review of fundamentals: Defn. matrix, order, Types of matrices: zero, row, column, square, diagonal, scalar, unit, symmetric, skew-symmetric
Determinant: Value of determinant of order 2×2 , 3×3 , minors, cofactors, adjoint, inverse of a matrix.
Solutions of linear equations: Cramers rule and matrix method involving two and three variables.

eigen values and eigenvectors: Defn., characteristic equation, characteristic roots, characteristic vectors(without any theorems) only 2x2 order.

Cayley Hamilton theorem.(only statement), verification of Cayley Hamilton theorem.(only 2x2 matrices), using the same finding the powers of A (A^4, A^5, A^{-1}, A^{-2}), inverse of a matrix using Cayley Hamilton theorem.

2. Integral Calculus

Defn., Problems of the type: i). $\int \frac{1}{a^2 \pm x^2} dx$, ii). $\int \frac{1}{x^2 - a^2} dx$,

iii). $\int \frac{1}{\sqrt{x^2 - a^2}} dx$ iv). $\int \frac{1}{\sqrt{x^2 + a^2}} dx$, v). $\int \frac{1}{ax^2 + bx + c} dx$,

vi). $\int \frac{1}{\sqrt{ax^2 + bx + c}} dx$ vii). $\int \frac{lx + m}{ax^2 + bx + c} dx$, viii). $\int \frac{lx + m}{\sqrt{ax^2 + bx + c}} dx$

ix). $\int \frac{1}{a + b \cos x} dx$ x). $\int \frac{1}{a + b \sin x} dx$, xi). $\int \frac{1}{a + b \cos x + c \sin x} dx$,

xii). $\int \frac{a \sin x + b \cos x}{A \sin x + B \cos x} dx$

Integration by partial fractions, Integration by parts,

Problems of the type $\int (f(x) + f'(x))e^x dx$, Definite integrals, properties(no proofs), problems.

3. Algebraic Structure

Binary operation, Defn. of group, properties(only statement), problems(both finite and infinite groups), subgroup, theorems(no proof), problems.

Vectors: Defns. of vector and scalar, vector addition, dot and cross product, projection of a vector on the other(no geometrical meaning), area of parallelogram, area of a triangle, scalar triple product, volume of parallelepiped, coplanarity of three vectors, vector triple product.

4. Differential Calculus

Differentiation of n^{th} derivatives: derivations of x^m , $(ax + b)^m$, $1/ax + b$, $\log(ax + b)$, $\sin(ax + b)$, $\cos(ax + b)$, $e^{ax} \sin(bx + c)$, $e^{ax} \cos(bx + c)$ and problems. Leibnitz rule (statement only), problems.

5. Differential Equations: Defn., solution(no formation), order and degree.

First order and first degree equations:

- Variable seperable
- homogeneous
- Exact equation $Mdx + N dy = 0$ (reducible to exact / Integrating Factor not included)
- Linear equation.

6. Analytical Geometry

Defn. of vector \vec{r} , magnitude, problems, 'distance between two points, finding $|\vec{AB}|$ and $|\vec{AB}|$, direction cosine, ratio, $l^2 + m^2 + n^2 = 1$, problems i). Finding the direction cosines of A and B, ii) $\sin^2\alpha + \sin^2\beta + \sin^2\gamma = 2$ iii). $\sum \cos 2\alpha = -1$

Angle between two lines: $\cos\theta$ and $\sin\theta$, problems: angle between two vectors, angles of a triangle, angle between diagonals of a cube, angle between diagonals of a rectangle.

Equation of a line: $\vec{r} = \vec{a} + \lambda\vec{\alpha}$ (one point), $\vec{r} - \vec{a} = \lambda(\vec{b} - \vec{a})$ (two point form),

Direct problems: i) condition for lines to be parallel and perpendicular ii) point of intersection of lines

Equation of a Plane: i). $(\vec{r} - \vec{a}) \cdot \vec{\alpha} = 0$, ii) normal form $lx + my + nz = p$

Problems: i) \vec{a} , $\vec{\alpha}$ ii) image or reflection

1. **Introduction** : Procedural Languages, definition of OOP, Basic concept of OOP, Object, Class, Data Abstraction, Data Encapsulation, Data Hiding member functions, Reusability, Inheritance, Creating new Data Types, Polymorphism, Overloading, Dynamic binding, and Message passing. (2 Hrs)
2. **C++ Features**: The iostream class, C++ Comments, C++ Keywords, Variable declaration, The Const Qualifier. The Endl, Set W, set precision, Manipulators, The scope resolution operator, The new & delete Operators. (2 Hrs)
3. **Functions**: Simple Functions: Function declaration, calling the function, function definition; Passing argument to, returning value from function; passing constants, Variables, pass by value, passing structure variables, pass by reference, Default arguments, return statements, return by reference, overloaded functions; Different number of arguments, Different Kinds of arguments, inline function. (8 Hrs)
4. **Objects & Classes** : Classes & Objects, Class Declaration, Class members; Data Constructors, Destructors, Member functions, Class member visibility; private, public, protected. The scope of the class object constructors; Default Constructor, Constructor with argument, constructor with default arguments, Dynamic constructor, copy constructor, Overloaded constructor, Objects as function arguments; member functions defined outside the class, Objects as arguments, returning objects from functions, class conversion, manipulating private Data members, Destructors; classes, objects & memory, array as class member data, Array of objects, string as class member (12 Hrs)
5. **Operator Overloading** : Overloading unary operator: Operator Keyword, Operator Arguments, Operator return value, Nameless temporary objects, limitations of increment operator, overloading binary operator, arithmetic operators, comparison operator, arithmetic assignment operator, Data conversion; conversion between Basic types, Conversion between objects & Basic types, conversion between objects of different classes. (6 Hrs.)
6. **Inheritance** : Derived Class & Base Class : Specifying the Derived class accessing Base class members, the protected access specifier, Derived class constructor, Overriding member functions, public and private inheritance; Access Combinations, Classes & Structures, Access Specifiers, Level of inheritance; Multilevel inheritance, Hybrid inheritance, Multiple inheritance; member functions in multiple inheritance, constructors in multiple inheritance, Containership; Classes within classes, Inheritance & Program Development. (8 Hrs)
7. **Virtual Functions**: Normal member function accessed with pointers, Virtual member functions accessed with pointers, Dynamic binding, pure virtual functions, Friend function; Friends for functional notation, friend classes, the this pointer; Accessing Member Data with this, using this for returning values. (5 Hrs)
8. **Templates & Exception Handling**: Introduction, Templates, Class Templates, function templates, Member function templates, Template arguments, Exception Handling. (4 Hrs)
9. **Streams** : The Stream class Hierarchy, Stream classes Header file, string J/O : Writing strings, reading strings, character J/O, Detecting End – of – file. Object J/O; writing an object to disk, reading an object from disk, J/O with multiple objects; the f stream class, The open function, File Pointers; Specifying the position, Specifying the offset. The tellg Function, Disk J/O with Memory Functions; Closing Files, Error Handling, Command Line Arguments. (5 Hrs)

Text books:

1. Prata: C++ Primer Plus, 4/e Pearson Education

1. Lafore Robert : Object Oriented Programming in Turbo C++, Galgotia Publications

References:

1. Lippman: C++ Primer, 3/e Pearson Education

2. E. Balaguruswamy: Object Oriented Programming with C++, Tata McGraw Hill Publications.

3. Stroustrup: The C++ Programming Language, Pearson Edition, 3rd Edition

4. Kamthane: Object Oriented Programming with ANSI and Turbo C++, Pearson Education

5. Bhawe: Object Oriented Programming Using C++, Pearson Education

6. E. Balagurusamy – Object Oriented Programming with C++ 4/e TMH 2008

7. Farrell : Object Oriented Programming Using C++, 1ST Edition 2008, Cengage Learning India

BCA204P - PRACTICALS IN C++ PROGRAMMING**List of programs**

- 1) Write a program to implement digital clock
- 2) Write a program to swap two numbers using friend function
- 3) Write a program to calculate area and circumference of circle using inline function
- 4) Write a program to create electricity bill
- 5) Write a program to prepare a shopping lists
- 6) Write a program to perform bank transaction
- 7) Write a program to perform addition of two matrices using operator overloading.
- 8) Write a program for multiplication of two matrices using operator overloading.
- 9) Write a program to find sum of complex number using friend function.
- 10) Write a program to implement operation on stack.
- 11) Write a program to add two distance variable.
- 12) Write a program to implement operation on queue.
- 13) Write a program to sort elements using templates.
- 14) Write a program to find the maximum of two numbers using template.
- 15) Write a program to compare two string using equal to operator.
- 16) Write a program to concatenate two strings.
- 17) Write a program to find maximum of 2 Nos. using friend function.
- 18) Write a program to create a student report using inheritance technique.
- 19) Write a program to add two time variable
- 20) Write a program to implement area of geometrical figures

BCA205T – DATA BASE MANAGEMENT SYSTEMS

TOTAL: 52 hrs

1. **Introduction:** Database and Database Users, Characteristics of the Database Approach, Different people behind DBMS, Implications of Database Approach., Advantages of using DBMS, When not to use a DBMS. (5 Hrs)
2. **Database System Concepts and Architecture:** Data Models, Schemas, and Instances., DBMS Architecture and Data Independence., Database languages and interfaces., The Database system Environment, Classification of Database Management Systems. (4 Hrs)
3. **Data Modeling Using the Entity-Relationship Model:** High level Conceptual Data Models for Database Design with an example., Entity types, Entity sets, Attributes, and Keys, ER Model Concepts, Notation for ER Diagrams, Proper naming of Schema Constructs, Relationship types of degree higher than two. (5 Hrs)
4. **Record Storage and Primary File Organization:** Secondary Storage Devices. Buffering of Blocks. Placing file Records on Disk. Operations on Files, File of unordered Records (Heap files), Files of Ordered Records (Sorted files), Hashing Techniques, and Other Primary file Organization. (6 Hrs)
5. **Functional Dependencies and Normalization for Relational Databases :** Informal Design Guidelines for Relational Schemas, Functional Dependencies, Normal Forms Based on Primary Keys., General Definitions of Second and Third Normal Forms, Boyce-Codd Normal Form. (6 Hrs)
6. **Relational Data Model and Relational Algebra:** Relational Model Concepts., Relational Model Constraints and Relational Database Schema, Defining Relations, Update Operations on Relations., Basic Relational Algebra Operations, Additional Relational Operations., Examples of Queries in the Relational Algebra., Relational Database design Using ER – to – Relational Mapping. (6 Hrs)
7. **Relational Database Language:** Data definition in SQL, Queries in SQL, Insert, Delete and Update Statements in SQL, Views in SQL, Specifying General Constraints as Assertions, Specifying indexes, Embedded SQL. (5 Hrs)
8. **PL / SQL:** Introduction, Exceptions & Cursor Management, Database Triggers, Functions, Procedures and packages. (8 Hrs)
9. **Transaction Processing Concepts:** Introduction, Transaction and System Concepts, Desirable properties of transaction, Schedules and Recoverability, Serializability of Schedules, Transaction Support in SQL, Locking Techniques for Concurrency Control, Concurrency Control based on time stamp ordering, Optimistic Concurrency control techniques, Using locks for Concurrency Control in Indexes. (7 Hrs)

Text book :

1. Patrick O'Neil, *Data Base Principles, Programming & Performance 2nd Edn.* Academic Press, 2002.
2. Elmasri & Navathe, *Fundamentals of Database Systems (Fourth Edition)*, Pearson Education, 2003.
3. Sundarraman, *Oracle 9i programming A Primer, 1/e* Pearson Education.
4. ROBCORONEL, *DBMS, Implementation and Management, 5th Edn.*, Thomson Pub., 2005.

References :

1. Kahate, *Introduction to Database Management System*, Pearson Education 2004.
2. Abrahamsi, Silberschatag, Henry. F. Korth, S. Sudarshan, *Database System Concepts*, Mc.graw hill.
3. Jeffrey D. Ullman, *Principles of database system*.
4. Oracle Press : *ORACLE - Computer reference*
5. C.J. Date, *Introduction to database systems, Sixth Edition*, Addison Wesley, 1995.
6. Raghu Ram Krishnan, *Database Management Systems, Second Edition*, Mc.Graw Hill, 2000
7. Leon – *Fundamental of Database Management System*
8. Rob : *Database Management Systems: Design, Implementation and Management*, 7th Edition, 2008, Cengage Learning India
9. Pratt: *Concepts of Database Management*, 5th Edition, 2008, Cengage Learning India

BCA205P - PRACTICALS IN DBMS

Programs must be developed in the practical classes in such a way that integration of the programs leads to an application program. This should be a pre-cursor to the mini projects to be taken up by the students in the fifth and sixth semesters.

THEORY AND PRACTICAL EXAMINATIONS

The pattern of question paper and the scheme of evaluation are as per the prescribed ones for science degree courses.

Text Book for BCA Mathematics paper :

1. Grewal, B.S, *Higher engineering Mathematics, Latest Edition*

Reference Books for BCA Mathematics paper:

1. Sastry S.S. *Engineering Mathematics, 2000*
2. Peter V. O'Neil, *Advanced Engineering Mathematics, 5th Edition*.
3. Liu – *Elements of Discrete Mathematics (SIE) 3/e*

Text Book for BCA Electronics paper :

1. Bignell & Donovan, *Digital Electronics, 4th Edn. Thompson Pub.*
2. V. K. Mehta, *Basic Electrical and Electronics Engineering*.
3. Thomas L. Floyd, " *Digital Fundamentals*", Pearson Education Inc, New Delhi, 2003

Reference Books for BCA Electronics paper:

1. Thomas C. Bartee, *Digital fundamentals*
2. Morris Mano, *Digital Design, 3rd ed, Prentice Hall of India Pvt.Ltd, New Delhi*.
3. R. P Jain, *Modern Digital Electronics, 3rd ed, Tata Mc Graw Hill, 2003*.
4. Malvino and Leach, *Digital Electronics*.
5. Salivahanan – *Electronic Devices and Circuits 2/e TMH*.

THIRD SEMESTER
BCA301T – INDIAN LANGUAGE

Syllabus as per the one prescribed for science courses of Bangalore University.

BCA302T – ENGLISH

Syllabus as per the one prescribed for science courses of Bangalore University.

BCA303T - INDIAN CONSTITUTION

Unit – 1

- a. Framing of the Indian Constitution: Role of the Constituent Assembly.
- b. Philosophy of the Constitution: Objectives, resolution, preamble, fundamental Rights and Duties. Human rights and Environmental protection. 10 hrs

Unit -2

- a. Special Rights created in the Constitution of Dalits, Backward Classes, Women and Children, and religious and linguistic minorities.
- b. Directive Principles of State policy: The need to balance fundamental rights with directive principles. 10 hrs

Unit – 3

- a. Union Execution : President, Prime Minister and Council of Ministers: powers and functions, coalition Government, problems in their working.
- b. Union Legislature : Lok Sabha and Rajyo Sabha, powers and functions. Recent trends in their functioning. 08 hrs

Unit – 4

- a. State Government : Governor, Chief Minister and Council of ministers, Legislature.
- b. Centre – State relation: Political, financial, administrative : Recent Trends. 12 hrs

Unit-5

- a. Judiciary : Supreme Court, Judicial Review, Writs Public interest litigations. Enforcing rights through writs.
- b. Emergency provision (Article 356) 10 hrs

Books for Reference:

1. D.D Basu – *Introduction to the Indian Constitution.*
2. A.S Narang – *Indian Constitution, Government and Politics.*
3. Nani Palkhivala – *we the People.* UBS Publishers, New Delhi, 1999.
4. A.G Noorani – *Indian Government and Politics.*
5. J.C Johari – *Indian Government and Politics Vol-I and II, Vishal, New Delhi.*
6. Gran Ville Austin–*The Indian Constitution – Corner Stone of a Nation, Oxford, New Delhi, 2000.*
7. M.U. Pylee, *Constitutional Government in India.*
8. K.K. Ghai, *Indian Constitution.*
9. J.N Pandey, *Constitution of India.*

BCA304T – OPERATING SYSTEMS

Total: 52 Hrs

- 1. Introduction:** Batch Systems, Concepts of Multiprogramming and Time Sharing, Parallel, Distributed and real time Systems, Operating System Structures, Components & Services, System calls, System programs, Virtual machines (6 Hrs)
- 2. Process Management:** Process Concept, Process Scheduling, Co – Operating process, Threads, Inter process communication, CPU Scheduling Criteria, Scheduling algorithm, Multiple Processor Scheduling, Real time Scheduling, Algorithm evolution. (8 Hrs)
- 3. Process Synchronization and deadlocks:** The Critical Section Problem, Synchronization hardware, Semaphores, Classical problems of synchronization, Critical regions, monitors, Dead locks – System model, Characterization, Dead lock prevention, avoidance and detection, Recovery from dead lock, Combined approach to deadlock handling. (10 Hrs)
- 4. Memory Management:** Logical and Physical address space, Swapping, Contiguous allocation, Paging, Segmentation, Segmentation with paging in Mastics and Intel 386, Virtual memory – Demand paging and it's performance, Page replacement algorithms, Allocation of frames, thrashing, page size and other considerations. Demand Segmentation (10 Hrs)
- 5. File management (Systems, Secondary Storage Structure):** File-Concepts, Access methods, Directory Structure, Protection and consistency semantics, File system structure, Allocation methods, Free space management, Directory Implementation, Efficiency and Performance, Recovery. (8 Hrs)
- 6. Disk Management (Structure, Disk Scheduling Methods):** Disk Structure & Scheduling methods, Disk management, Swap – Space management, (5 Hrs)
- 7. Protection and Security:** Goals of protection, Domain Protection, Access matrix, Security Problem, Authentication, One time password, program threats, System threads. (5 Hrs)

Text books:

1. Abraham Silberschatz and peter Baer Galvin, *Operating System Concepts, Fifth Edition*, Pearson Education 1989 (Chapter 1,3.1,3.2,3.3,3.4,3.6,4,5,6 (Except 6.8,6.9), 7, 8,9,10,11,13, (Except 13.6) 19 (Except 19.6),20(Except 20.8, 20.9), 22,23)
2. Nutt: *Operating Systems, 3/e* Pearson Education 2004
3. Stuart : *Operating sytems : Principles , Design and Implementation, 1st Edition* 2008, Cengage Learning India

References:

- 1 Milan Milonkovic, *Operating System Concepts and design, II nd Edition*, McGraw Hill 1992.
- 2 Richard Peterson , *Linux- The complete reference*.
- 3 Tanenbaum, *Operation System Concepts*. Pearson Education.
- 4 Nutt, *Operating Systems*. Pearson Education.
- 5 Stallings, *Operating Systems*, Pearson Education.
- 6 Dhamdhare – *Operating Systems 2/e* TMH 2007
- 7 Flynn : *Operating Systems , 1st Edition*, 2008, Cengage Learning India

BCA305T – DATA STRUCTURES Using C

- Introduction to Data structures:** Definition, Classification of data structures : primitive and non primitive. Operations on data structures. **Total: 52 Hrs**
(2 Hrs)
- Dynamic memory allocation and pointers:** Definition Accessing the address of a variable, Declaring and initializing pointers. Accessing a variable through its pointer. Meaning of static and dynamic memory allocation. Memory allocation functions : malloc, calloc, free and realloc. **(4 Hrs)**
- Recursion:** Definition, Recursion in C, Writing Recursive programs – Binomial coefficient, Fibonacci, GCD. **(4 Hrs)**
- Searching and Sorting Search:-** Basic Search Techniques : Search algorithm searching techniques : sequential search, Binary search – Iterative and Recursive methods. Comparison between sequential and binary search. **(4 Hrs)**
- Sort- General Background:** Definition, different types: Bubble sort ,Selection sort, Merge sort, Insertion sort, Quick sort **(10 Hrs)**
- Stack –** Definition, Array representation of stack; Operations on stack : Infix, prefix and postfix notations Conversion of an arithmetic expression from Infix to postfix. Applications of stacks. **(7 Hrs)**
- Queue-** Defn, Array representation of queue, Types of queue: Simple queue, circular queue, double ended queue(deque)priority queue, operations on all types of Queues**(7 Hrs)**
- Linked list –** Definition, Components of linked list, Representation of linked list, Advantages and Disadvantages of linked list. Types of linked list : Singly linked list, Doubly linked list, Circular linked list and circular doubly linked list. Operations on singly linked list : creation, insertion, deletion, search and display. **(7 Hrs)**
- Tree -** Definition : Tree, Binary tree, Complete binary tree, Binary search tree, Heap Tree terminology : Root, Node, Degree of a node and tree, Terminal nodes, Non-terminal nodes, Siblings, Level, Edge, Path, depth, Parent node, ancestors of a node. Binary tree : Array representation of tree, Creation of binary tree. Traversal of Binary Tree : Preorder, Inorder and postorder. **(7 Hrs)**

Text books :

1. Kamthane: *Introduction to Data Structures in C*. Pearson Education 2005.
2. Langsam, Ausenstein Maoshe & M. Tanenbaum Aaron. *Data Structures using C and C++* Pearson Education

References :

1. Weiss, *Data Structures and Algorithm Analysis in C, II Edition*, Pearson Education, 2001
2. Lipschutz: *Schaum's outline series Data structures* Tata McGraw-Hill
3. Robert Kruse *Data Structures and program designing using 'C'*
4. Trembley and Sorenson *Data Structures*
5. E. Balaguruswamy *Programming in ANSI C*.
6. Bandyopadhyay, *Data Structures Using C* Pearson Education, 1999
7. Tenenbaum, *Data Structures Using C*. Pearson Education, 2000.
8. Krishnamoorthy – *Data Structures using C*. TMH 2008.
9. Forouzan : *Computer Science A Structured Programming Approach using C, 2nd Edition*, 2008 Cengage Learning India
10. Gilberg : *Data Structure a Pseudocode Approach using C, 2nd Edition*, 2008, Cengage Learning India.

BCA305P – Data Structures Using C - Lab

al: 52 Hrs
: primitive
(2 Hrs)
dress of a
ts pointer.
s : malloc,
(4 Hrs)
Binomial
(4 Hrs)
searching
methods.
(4 Hrs)
ort, Merge
(10 Hrs)
prefix and
o postfix.
(7 Hrs)
e, circular
ies(7 Hrs)
nked list,
nked list,
on singly
(7 Hrs)
Heap Tree
n-terminal
ary tree :
Preorder,
(7 Hrs)

id C++

2001

lition,

1. Write a C program to search for an element in an array using Binary search
2. Write a C program to sort a list of N elements using Bubble sort Technique
3. Write a C program to demonstrate the working of stack of size N using an array. The elements of the stack may assume to be of type integer or real, the operations to be supported are 1. PUSH 2. POP 3. DISPLAY. The program should print appropriate messages for STACK overflow, Under flow and empty, use separate functions to detect these cases
4. Write a C program to simulate the working of an ordinary Queue using an array. Provide the operations QINSERT, QDELETE and QDISPLAY. Check the Queue status for empty and full.
5. Write a C program to simulate the working of an Circular Queue using an array. Provide the operations CQINSERT, CQDELETE and CQDISPLAY. Check the Circular Queue status for empty and full.
6. Using dynamic variables and pointers Write a C program to construct a singly linked list consisting of the following information in each node;
Roll – No (Integer), Name (Character string)
The operations to be supported are ;
 1. LINSERT Inserting a node in the front of the list
 2. LDELETE Deleting the node based on Roll – No
 3. LSEARCH Searching a node based on Roll-No
 4. LDISPLAY Displaying all the nodes in the list
7. Write a C program to sort a list of N elements using Merge sort Algorithm
8. Using Dynamic variables and pointers construct Binary search tree of integers , Write C functions to do the following ;
 1. Given a KEY, Perform a search in Binary search tree . If it is found display Key found else insert the key in the Binary search tree.
 2. While constructing the Binary search tree do not add any duplicate
 3. Display the tree using any of the traversal method
9. Write a C program to sort a list of N elements of integer type using heap sort Algorithm
10. Write a C program to simulate the working of Towers of Hanoi problem for N disks , print the total number of Moves taken by the program.
11. Write a C program to sort a list of N elements of integer type using quick sort Algorithm
12. Write a C program to find nc, using recursion
13. Write a C program to convert and print a given valid fully parenthesized in fix arithmetic expression to post fix expression, the expression consists of single character (letter or digit) as operands and +, -, * , / as operators, assume that only binary operators are allowed in the expression
14. Write a C program to search for an element using sequential search
15. Write a C program to create file for N students, it should contain Roll-No, Name and Marks in two subjects. Using the above created file, create an out put file which contains Roll-No, Name, Marks in subjects, Total and Average.

BCA306T – NUMERICAL ANALYSIS and LINEAR PROGRAMMING

Total: 52 Hrs

- I. Floating-point representation and errors-Normalized floating-point forms, Errors in representing numbers, Floating point machine number and machine epsilon, Loss of significance and its avoidance(Chapter 2 in Cheney and Kincaid). 6 Hrs
- II. Roots of equations-locating roots of $f(x)=0$ Bisection method and convergence analysis, Newton's method and convergence analysis, failure of Newton's method due to bad starting points, modification of Newton's method for multiple roots, Newton's method for System of Non-linear equations, Secant method and convergence analysis, Golden ratio (Chapter 3 in Cheney and Kincaid). 8 Hrs
- III. Interpolation and numerical differentiation-polynomial interpolation and its existence Lagrange and Newton form of interpolating Polynomial, Divided difference and recursive property , Inverse interpolation ,Error in Polynomial interpolation, First and Second derivative formulae via interpolation Polynomials. (Chapter 4 in Cheney and Kincaid). 8 Hrs
- IV. Numerical integration-Trapezoidal, Simpson's and adaptive Simpson rules and Error analysis, (Chapters 5 and 6 in Cheney and Kincaid). 6 Hrs
- V. System of linear equations-Gaussian elimination and back substitution –partial and complete pivoting, Tridiagonal and pentadiagonal banded systems, Thomas algorithm, Doolittle, Cholesky and Crout LU decomposition methods, Jacobi and Gauss –Seidel iterative methods and convergence theorems. Power (and inverse power) method of obtaining largest (smallest) eigenvalue and corresponding eigenvector. (Chapters 7 and 8 in Cheney and Kincaid). 8 Hrs
- VI. Ordinary differential equations- initial value problem, Picard's, Taylor series, Runge-Kutta first, second and fourth order methods, adaptive Runge-Kutta method of fifth order (derivation of only Runge-Kutta first and second order methods), boundary value problems-shooting methods for linear differential equations. (Chapters 10, 11 and 14 in Cheney and Kincaid). 8 Hrs
- VII. Linear programming-first Primal form, Graphical solution method, Transforming problems into first primal form, dual problem, Theorem on primal and dual problems, Second Primal form. Simplex method , Approximate solution of inconsistent linear systems. (Chapter 17 in Cheney and Kincaid). 8 Hrs

Text Book

1. Cheney E. W. and Kincaid D. R. "Numerical Method and Applications, Cengage learning (Book/cole)-Indian Edition(2008).

Reference Books

1. Jain M. K. ,Iyengar S. R. K. and Jain R. K. " Numerical methods for Scientific and Engineering Computation "
2. Sastry S. S. " Introductory methods of Numerical Analysis ", PHI(2005).

BCA306P – NUMERICAL ANALYSIS and LINEAR PROGRAMMING Lab

- 1) Write a program to find the roots of an equation $f(x) = 0$ using Bisection method.
- 2) Write a program to find the simple/multiple roots of $f(x) = 0$ using Newton – Raphson method.
- 3) Write a program to find the roots of system of non-linear algebraic equations using Newton's method.
- 4) Write a program to find the roots of $f(x) = 0$ using Secant method.
- 5) Write a program to find the integral of a function using Trapezoidal rule.
- 6) Write a program to find the integral of a function using Simpson's $1/3^{\text{rd}}$ and $3/8^{\text{th}}$ rule using switch case.
- 7) Write a program to find the integral of a function using adaptive Simpson method.
- 8) Write a program to solve the system of equations $Ax = b$ in tridiagonal form using Thomas Algorithm.
- 9) Write a program to solve the system of equations $Ax = b$ using Gauss elimination method.
- 10) Write a program to solve the system of equations $Ax = b$ using Jacobi Iteration method.
- 11) Write a program to solve the system of equations $Ax = b$ using Gauss-Seidel method.
- 12) Write a program to find the largest (or smallest) Eigen value and corresponding eigen vector of a square matrix using power (or inverse power) method.
- 13) Write a program to solve first and second order ordinary differential equations (initial value problem) using Runge-Kutta fourth order method.
- 14) Write a program to solve first order ordinary differential equations (initial value problem) using adaptive Runge-Kutta method .
- 15) Write a program to solve second order ordinary differential equations (boundary value problem) using shooting method based on adaptive Runge-Kutta method and Newton-Raphson method.
- 16) Write a program to solve the optimization problem solvable by Simplex method.

**FOURTH SEMESTER
BCA401T – INDIAN LANGUAGE**

Syllabus as per the one prescribed for science courses of Bangalore University.

BCA402T – ENGLISH

Syllabus as per the one prescribed for science courses of Bangalore University.

**BCA403T – ENVIRONMENTAL STUDIES
As approved by the Environmental Science Board**

- Total : 52 hrs**
- Unit 1: Nature of environmental studies:** Definition, scope and importance, Multidisciplinary nature of environmental studies, need for public awareness.
- Natural resources and associated problems:** (a) **Forest resources:** Use and over-exploitation, deforestation timber extraction, mining, dams and their effects on forests and tribal people, (b) **Water resources:** Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. (c) **Mineral resources:** Use and exploitation, environmental effects of extracting and using mineral resources. (d) **Food resources:** World food problems, changes caused by agriculture effects of modern agriculture, fertilizer-pesticide problems. (e) **Energy resources:** Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. (f) **Land resources:** land as resources, and land degradation, man induced landslides, soil erosion and desertification.
- Role of an individual in conservation of natural resources Equitable use of resources for sustainable lifestyles. (10 Hrs)
- Unit 2: Ecosystems:** Concept of an ecosystem, Structure and function of an ecosystem, Producers, consumers and decomposers, Energy flow in the ecosystem, Ecological succession, Food chains, food webs and ecological pyramids, Introduction, types, Characteristic features, structure and function of the following ecosystem: a) Forest ecosystem b) Grassland ecosystem c) Desert ecosystem d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) (10 Hrs)
- Unit 3: Biodiversity and its conservation:** Introduction-Definition: genetic, species and ecosystem diversity, Biogeographical classification of India, Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option value, Biodiversity at global, national and local levels, India as a mega-diversity nation, Western ghat as a biodiversity, Hot-spots of biodiversity, Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife Conflicts, Endangered and endemic species of India, Conservation of biodiversity: In-situ and Ex-situ, Conservation of biodiversity. (10 Hrs)
- Unit 4: Environmental Pollution:** Definition, causes, effects and control measures of: a) Air pollution b) Water pollution c) Soil pollution d) Marine pollution e) Noise pollution f) Thermal pollution g) Nuclear hazards., Solid waste management: causes, effects and control measures urban and industrial wastes, Role of an individual in prevention of pollution, Disaster management: folds, earthquake, cyclone and landslides, Tsunami. (10 Hrs)
- Unit 5: Social Issues and Environment:** From Unsustainable to Sustainable development, Urban problems related to energy, Water conservation, rain water harvesting, watershed management, Resettlement and rehabilitation of people; its problems and concerns, Environmental ethics: Issues and possible solutions, Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust,

Wasteland reclamation, consumerism and waste products, Environment protection Act, Air (Prevention and control of pollution) Act., Water (Prevention and control of pollution) Act., Wildlife protection act, Forest conservation Act, Issues involved in enforcement of environmental legislation public awareness. (8 Hrs)

Unit 6: Human Population and the Environment: Population growth, variation among nations, Population explosion, Family welfare programme, Environment and human health, Value Education, Women and Child Welfare, Role of information technology in Environmental and human health. (4 Hrs)

References:

1. S. Sinha, M. Shukla & R. Shukla, *Text book of Environmental studies* AITBS Publishers, Delhi. (2005)
2. Agarwal, K.C., 2001 *Environmental Biology*, Nidi Publ. Ltd. Bikaner.
3. Bharucha Erach, *The Biodiversity of India*, Mapin publishing Pvt. Ltd. Ahmedabad-380013, India.
4. Brunner R.C., 1989, *Hazardous Waste Incineration*, McGraw Hill Inc. 480p.
5. Clark R.S. *Marine pollution*, Clarendon Press Oxford.
6. Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2001 *Environmental Encyclopedia*, Jaico Publ. House. Mumbai, 1196p.
7. De. A.K. *Environmental Chemistry*, Wiley Eastern Ltd.,
8. *Down to Earth*, Centre for Science and Environment.
9. Gleick, H.P. 1993 *Water in crisis*, pacific institute for studies in Dev. Environmental & Security. Stockholm Env. Institute. Oxford University press 473p.
10. Hawkins R.E. *Encyclopedia of Indian Natural History*, Bombay Natural History Society, Bombay,
11. Jadhav H & Bhosle V.M. 1995 *Environmental Protection and laws*. Himalayas Pub. House Delhi, 284p
12. Mckinney M.L. & Schoel R.M. 1996 *Environmental Science systems & Solutions* Web. Enhanced edition 639p.
13. Heywood, Vh & Watson R.T. 1995 *Global biodiversity Assesment* Cambridge. Univ. press 1140p
14. Mhaskar A.K. *Matter Hazardous Techno-Science Publications*.
15. Miller T.G. Jr. *Environment Science* Wadsworth publishing co.
16. Odum E.P. 1971 *Fundamental of Ecology* W.B. Saunders Co. USA 574p
17. Rao M.N. & Data A.K. 1987 *Waste Water treatment*, Oxford and IBH Publ. Co pvt, ltd 345p
18. Sharma B.K. 2001 *Environmental chemistry* Goel Publ. House, Meerut.
19. Townsend C. Harper. J. and Michel Begon, *Essesetials of Ecology* Blackwell Science.
20. Trivedi R.K. *Handbook of Environmental Laws, rules, guidelines, ompliances and Standards*, Vol I and II Enviro Media.
21. Trivedi R.K. and P.K. Goel *introduction to air pollution*, Techno-Science Publications.
22. Wagner K.D. 1998 *Environmental Management*. W.B. Saundars Co. Philadelphia, U.S.A. 499p.
23. Benny Joseph – *Environmental Studies 2/e* TMH 2008
24. Miller : *Environmental Science* , 11th Edition 2008, Cengage Learning India

BCA404T – DATA COMMUNICATION AND NETWORKS

Total: 52 Hrs

1. Communication Networks & Services

Approaches to Network design: Network Goals, Network Topologies, Switching Techniques: Message, Packet and Circuit switching,

Evolution of Network Architecture and Services

(i) Telegraph Networks and Message switching

(ii) Telephone Networks and Circuit switching

(iii) Internet, Computer Network and Packet switching

Essential elements of Network Architecture

Key factors in Communication Network Evolution

(6 hrs)

2. Layered Architecture & Applications

Examples of Layering: OSI Reference Model, TCP/IP Model

Application Layer Protocols and TCP/IP utilities : Telnet, FTP, HTTP and IP utilities like PING, TRACEROUTE, IPCONFIG, NETSTAT

(4 hrs)

3. Digital Transmission

Digital representation of information, Basic properties of digital transmission systems, Characterization of communication channels: Frequency domain and Time domain, Fundamental limits in digital transmission: Nyquist signaling rate, Shannon channel capacity, Line coding.

Modems and Digital modulation: Amplitude shift keying, Frequency shift keying, Phase shift keying.

Transmission media: Twisted Pair, Coaxial cable, Optical Fibre, Radio transmission, Infra red Light.

Error detection and correction: Error detection, two dimensional parity checks, internet checksum, polynomial codes and their error detection capability

Multiplexing: Frequency Division Multiplexing, Time Division Multiplexing, Wavelength Division Multiplexing, SONET Multiplexing

Circuit Switches: Space division switches, time division switches

(12 hrs)

4. Peer-To-Peer Protocols

Connection oriented and connectionless service models, Features of Services offered by a given layer, Peer to peer protocols in end to end and single hop network

ARQ protocols: Stop and wait, go back N, Selective Repeat

Other peer to peer protocols: Sliding window flow control, Timing recovery for synchronous services, TCP Reliable stream service and flow control

Data Link Control – Framing, Point to Point Protocol (PPP), High level Data Link Control (HDLC).

(10 hrs)

5. Medium Access Control Protocols

Multiple access communications,

Random access MAC protocols: ALOHA, Slotted ALOHA, CSMA, CSMA/CD

Scheduling approaches to medium access control: Reservation systems, polling, Token passing rings, Comparison of Scheduling approaches in medium access control,

Comparison of random access and scheduling medium access controls

Channelization: FDMA, TDMA, CDMA

(7 hrs)

6. Local Area Networks

LAN structure, MAC sublayer, Logical Link Control layer (LLC), LAN Standards: Ethernet and IEEE 802.3 LAN standard, Token Ring and IEEE 802.5 LAN standard, FDDI, Wireless LANs and IEEE 802.11 standard, LAN bridges: Transparent bridges, Source Routing bridges, Mixed-media bridges. (7 hrs)

7. Packet Switching Networks

Network services and Internal Network operation, Packet network topology, Datagrams and Virtual circuits, Connectionless packet switching: Virtual circuit packet switching, Structure of a packet switch

Routing in packet networks : Routing algorithm classification, Routing tables, Flooding, Hierarchical Routing, Shortest path routing algorithms (Bellman Ford Algorithm, Dijkstra's Algorithm), Link State routing, Distance Vector Routing

Congestion control algorithms: Open Loop control and Closed Loop control (6 hrs)

Text books

- 1) Douglas E Comer. "Networks and Internet with Internet Applications". Prentice Hall, 2004.
- 2) Stallings, Data and Computer Communications, 7/e, Pearson Education, 2003
- 3) Alberto Leon-Garcia & Indra Widjaja, Communication Networks – Fundamental Concepts & Key architectures, Mc.Graw Hill – 2000.

References

- 1) Andrew S Tanenbaum Computer Networks, 4/e, Pearson Education
- 2) S. Keshav, An Engineering Approach to Computer Networks, Pearson Education.
- 3) Behrouz Ferouzan, Introduction to Data Communications & Networking TMH, 1999.
- 4) Larry & Peterson & Bruce S Davis; Computer Networks Second Edition, Morgan Kaufman, 2000.
- 5) Hals, Data Communication, Computer Networks and Open Systems. Held, Understanding Data Communications.
- 6) Forouzan – Data Communications and Networking 4/e (SIE)
- 7) White : Data Communications and Networking 1st Edition, 2008, Cengage Learning India

BCA405T – VISUAL PROGRAMMING

Total: 52 hrs

Unit 1: Windows Programming: Traditional Programming Paradigms – Overview of Windows Programming – Data Types – Resources – Windows Messages – Device Contexts – Document Interfaces – Dynamic Linking Libraries – Software Development Kit (SDK) Tools – Context Help. **10 hrs**

Unit 2: Visual Basic Programming: Introduction – Forms – Variables, Types – Properties – Decision Making – Looping – Modules – Procedures – Functions-Tool Box Controls – Menus – Grid Controls – Dialog Boxes – Database Manager – Data Control – Record set Objects. **20 hrs**

Unit 3: Visual C++ Programming: Objects – Classes - VC++ Components – Resources – Event Handling – Menus – Dialog Boxes – Importing VBX Controls – Files – MFC File Handling – Document View Architecture – Serialization. **10 hrs**

Unit 4: Interfacing Other Applications – Multiple Document Interface (MDI) – Splitter Windows – Exception Handling – Debugging – Object Linking and Embedding (OLE) – Database Application – DLL – ODBC. 12 hrs

Text Books :

1. *Visual Basic 6 by Gurumit singh (Aman) , Firewall media.*
2. *Deitel, Visual Basics 6- How to program. Pearson Education*

Reference Books:

1. *Windows Programming by Charles Petzold, Microsoft Press.*
2. *Visual Basic 6 from the ground up by Garry Cornell, TMH.*
3. *Visual C++ Programming by Steven Holzner, PHI.*
4. *Visual Programming by Yashwant Kanitkar.*

BCA405P – VISUAL PROGRAMMING LAB

Minimum of 15 related programs must be developed in the practical classes in such a way that integration of the programs leads to an application program. This should be a precursor to the mini projects to be taken up by the students in the fifth and sixth semesters.

BCA406T – UNIX PROGRAMMING

Total: 52 Hrs

1. **Introduction**
History, salient features, Unix system architecture, Unix command format, Unix internal and external commands, Directory commands, File related commands, Disk related commands, general utilities. (6)
2. **Unix File System**
Boot inode, super and data block, in-core structure, Directories, conversion of pathname to inode, inode to a new file, Disk block allocation. (2)
3. **Process Management**
Process state and data structures of a Process, User vs. kernel node, context of a Process, background processes, Process scheduling commands, Process terminating and examining commands. (6)
4. **Secondary Storage Management**
Formatting, making file system, checking disk space, mountable file system, disk partitioning, file compression. (6)
5. **Special Tools and Utilities**
Filters, Stream editor SED and AWK, Unix system calls and library functions, Processes, signals and Interrupts, storage and compression facilities. (8)
6. **Shell Programming**
Vi editor, shell types, shell command line processing, shell script features, executing a shell script, system and user-defined variables, expr command, shell screen interface, read and echo statement, command substitution, escape sequence characters, shell script arguments, positional parameters, test command, file test, string test, numeric test.
Conditional Control Structures – if statement, case statement
Looping Control Structure – while, until, for, statements.
Jumping Control Structures – break, continue, exit. (16)

7. Unix System Communication

Introduction, write, read, wall commands, sending and handling mails. (4)

8. System Administration

Roles of a System Administrator, File System Maintenance, System Startup and Shutdown, User Management, Backup and Restore, Daemons, Domain Name System DNS, Distributed File System. (4)

Text Books

- 1) Forouzan.: *Unix and Shell Programming*, 1st Edition, 2008 Cengage Learning India
- 2) Raymond, *The Art of Unix Programming*, Pearson Education, Asia 2002.
- 3) Kernighan B W & Robert B, *The Unix programming environment*.
- 4) *UNIX and Shell Programming*, Archana Verma, Firewall Media.

References

- 1) Glass, *Unix for Programmers and Users*, 3/e Pearson Education
- 2) Kernighan, *The Unix Programming Environment*
- 3) Sobell G, *A practical Guide to Unix System*.
- 4) Kochan, *Unix Shell Programming*, Pearson
- 5) Sumithaba Das – *UNIX: Concepts and Applications 4.e*

BCA406P - UNIX PROGRAMMING LAB SECTION A

Write Shell programs for the following:

1. To count the number of characters in a given string
2. To find whether the given year is leap year or not
3. To check whether a given number is even or odd
4. To find the factorial of a given number.
5. To print a string in the reverse order.
6. To count the number of vowels in a given string.
7. To print all prime numbers between m and n ($m < n$).
8. To check whether a given string is a palindrome or not.
9. Write a shell script that displays all the files in the current directory.
10. To write a shell script that creates a file and compresses it using:
a) compress b) pack

SECTION B

11. Create a file containing the following fields: student No., student name, age, sex, height and weight. Print all the details in a neat format.

Write menu based shell programs with at least 3 options for the following:

12. Payroll system

(16)

FIFTH SEMESTER
BCA501T – SOFTWARE ENGINEERING

Total: 52 Hrs

1. **Introduction:** Definition of Software engineering, Software product and software process, Software attributes, Software Engineering challenges, Software development life cycle, Process model: Water fall model, Bohemia's Spiral model, Iterative enhancement model, Overview of risk management, Project management, Process visibility, Professional and ethical responsibility. **(4 Hrs)**
2. **System Engineering:** System and their environment, System Procurement, System Engineering Process, System Architecture modeling, Human Factors, System Reliability Engineering. **(3 Hrs)**
3. **Software Requirement Analysis and Specification:** Software Requirements - Functional and Non Functional, Requirement elicitation and Analysis, SRS document, Requirement specification, Requirement Engineering Process, Requirement Validation, Requirement Management. Social 7 organizational factors, System Models – Types of models, Metrics. **(8 Hrs)**
4. **Software Prototyping:** Prototyping in software process, Prototyping techniques, User interface prototyping. **(2 Hrs)**
5. **Software Design:** Design types, Design principles – Problem partitioning, Abstraction, Modularity, Top-Down and Bottom-up, Design process, Design Strategies, Design quality, Coupling and Cohesion, Design notation and specification, Design methodologies, Domain Specific architecture. **(5 Hrs)**
6. **Object oriented design and function oriented design:** Object oriented concepts- Classes and objects, inheritance, polymorphism, Object identification, Object oriented analysis and design example, Design models, object interface specification, Data flow design, Structural decomposition, Detailed design. **(5 Hrs)**
7. **User Interface Design:** Design Issues, User interaction, Information presentation, User interface design process, user analysis, user interface prototyping, Interface evaluation. **(3 Hrs)**
8. **Reliability and reusability:** Software reliability metrics, software reliability specifications, statistical testing, reliability growth modeling, fault avoidance, fault tolerance, exception handling and defensive programming, software development with reuse, reuse landscape, design patterns, Generator based reuse, Application system reuse – COTS product reuse, software product lines. **(8 Hrs)**
9. **Testing:** Testing fundamentals – error, fault and failure, Test cases and test criteria, process, test plan and strategies, Types of testing – Black box, White box, structural and interface testing, Program inspection, Levels of testing, Mathematically based verification, Static analysis tool, Metrics. **(8 Hrs)**
10. **Software Management:** Project management, quality management, cost estimation, cost estimation models, Risk management, software maintenance. **(6 Hrs)**

Text Books

1. Ian Sommerville - Software Engineering, 6th Edition, Pearson Education Ltd.

Reference Books

1. Roger S. Pressman - Software Engineering, A Practitioner's approach, 5th Edition, McGraw-hill book company
2. Richard Fairly - Software Engineering Concepts, First Edition, TATA Mcgraw Hill Publishing Co Ltd.
3. Pankaj Jalote - An integrated approach to Software Engineering - Narosa Publishing house.
4. Jawadekar- Software Engineering: A Primer TMH 2008

BCA502T – COMPUTER ARCHITECTURE

Total: 52 Hrs

DIGITAL LOGIC CIRCUITS: Logic gates Boolean algebra, map simplification, combinational circuits, flip-flop, sequential circuits. (05)

INTEGRATED CIRCUITS AND DIGITAL FUNCTIONS: Digital integrated circuits, IC flip-flops and registers, decoders and multiplexers, binary counters, shift registers, random - access memories (RAM) read-only memories (ROM) (10)

DATA REPRESENTATION : Data types, fixed-point representation, floating-point representation, other binary codes, error detection codes. (05)

BASIC COMPUTER ORGANIZATION AND DESIGN: Instruction codes, computer instruction, timing and control, execution and instruction, input-output and interrupt, design of computer. (10)

CENTRAL PROCESSOR ORGANIZATION: Processor bus organization, arithmetic logic unit (ALU), instruction formats, addressing modes, data transfer and manipulation, program control, microprocessor organization. (10)

INPUT-OUTPUT ORGANIZATION: Peripheral devices, asynchronous data transfer, direct memory access (DMA), priority interrupt, input-output processor (IOP). (06)

MEMORY ORGANIZATION : Auxiliary memory, microcomputer, memory hierarchy, associative memory, virtual memory, cache memory. (06)

References:

1. M.Moris Mano, Computer System Architecture, 2nd Edition Prentice Hall of India (1991).
2. Heuring and Jordan, Computer systems design and Architecture, Pearson Education (2003)
3. William Stallings, Computer Organization and Architecture, Pearson Education (2003)
4. Floyd, Digital Fundamentals, 8th Edition, Pearson Education (2003)
5. Andrew S. Tenenbaum, Structured Computer Organization, 3rd Edition, Prentice Hall of India (1990)
6. David Patterson & Hennessy, Computer Organization & Design, Elsevier, 2005.
7. Carter - Computer Architecture (SIE) (Schaum's Outline Series)

BCA503T – BANKING AND INSURANCE

Total: 52 Hrs

UNIT I: Financial System: Institutions, Markets – Primary, Secondary, Money & Capital markets, instruments of money market, Functions and their economic significance. (12)

UNIT II: Commercial Banks-Functions, Structure of Commercial banks in India-Sources of funds, Investment norms-factors determining liquidity of banks-Asset Structure of Commercial banks-profitability of banks (12)

UNIT III: The concept of Risk & Insurance – classification of insurance-life insurance—types of General Insurance – insurance of property, pecuniary interest, liability and person – types of policies fire, marine, motor, engineering, aviation, agriculture, liability and person. (08)

UNIT IV: Essentials of a contract- Principles applicable to insurance business- utmost good faith- insurable interest-indemnity-subrogation and contribution – proximate cause-financial principles- premium funds- investments-reserves-surplus-valuation of funds. Introduction to risk- Risk Appraisal-risk selection-underwriting-Reinsurance-concepts and methods-facultative, treaty reinsurances and various methods. (12)

UNIT V: Growth and development of insurance – present day Regulatory environment- Insurance Act, 1938-IRDA Act, 1999-Present Market environment- intermediaries – Office organization-departments-files-correspondence-new technology, controls. (08)

References:

1. G. Kotreswar, *Risk Management, Insurance and Derivatives*- Himalaya Publishing House.
2. T.T. Seth, *Insurance Principles and Practice*- S Chand, New Delhi
3. Courses IC 01, IC 02, IC 11, IC 12, IC 25 of Insurance Institute of India, Mumbai
4. L.M. Shole – *Financial Institutions and Markets*, TMH.
5. K.C. Shekar & Lakshmy Shekar, *Banking Theory & Practice*, Vikas Publication (2001).

BCA504T – JAVA PROGRAMMING

Total: 52 Hrs

1. **Introduction:** Internet origin and development – internet architecture frame work-world Wide Web. (12)
2. **Introduction to JAVA:** JAVA Evolution: Java History, Java Features, How Java Differs from C and C++, Java and Internet, Java and World Wide Web, Web Browsers, Hardware and Software requirements, Java Support Systems, Java Environment. Overview of JAVA Language: Introduction, Simple Java Program, More of Java, An Application with Two Classes Java Program structure, Java Tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command Line Arguments, Programming Style. Constants, Variables, and Data Types: Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Values to Variables, Scope of variables, Symbolic Constants, Type Casting, Getting Values of Variables, Standard Default Values, Operators and Expressions; Introduction, Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Increment and Decrement Operators, Conditional Operators, Bitwise Operators, Special Operators, Arithmetic Expressions, Evaluation of Expressions, Precedence of Arithmetic Operators, Type conversion and Associativity, Mathematical Functions. Decision Making and Branching: Introduction, Decision Making with if Statement, Simple if Statement, The if else Statement, Nesting of if else Statements, The else if Ladder, The Switch Statement, The ?: Operator. Decision Making and Looping: Introduction. The while Statement, The do Statement, The for Statement, Jumps in Loops Labeled Loops. (12 Hrs)
3. **Classes, Arrays, Strings and Vectors:** Classes, Objects and Methods: Introduction, Defining a Class, Adding Variables, Adding Methods, Creating Objects, Accessing Class Members, Constructors, Methods Overloading, Static Members, Nesting of Methods, Inheritance: Extending a Class Overriding Methods, Final Variables and Methods, Finalizer methods, Abstract Methods and Classes, Visibility Control. Arrays, Strings and Vectors: Arrays, One – dimensional Arrays, Creating an Array, Two – dimensional Arrays, Strings, Vectors, Wrapper Classes. (8 Hrs)
4. **Interfaces, Packages, and Multithreaded Programming:** **Interfaces:** Multiple Inheritance: Introduction, Defining Interfaces, Extending Interfaces, Implementing Interfaces, Accessing Interface Variables. **Packages:** Putting Classes together: Introduction, Java API Packages, Using System Packages, Naming Conventions, Creating Packages, Accessing a Package, Using a Package, Adding a Class to a Package, Hiding Classes. **Multithreaded Programming:** Introduction, Creating Threads, Extending the Thread Class, Stopping and Blocking a thread, Life Cycle of a thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the 'Runnable' Interface. (10 Hrs)
5. **Managing Exceptions, Applet Programming: Managing Errors and Exception:** Introduction, Types of Errors, Exceptions, Syntax of Exception Handling Code, Multiple Catch Statements, Using Finally Statement, Throwing Our Own Exceptions,

Using Exceptions for Debugging. Applet Programming: Introduction, How Applets Differ from Applications, Preparing to Write Applets, Building Applet Code, Applet Life Cycle, Creating an Executable applet, Designing a Web Page, Applet Tag, Adding Applet to HTML File, running the Applet, More about Applet Tag, Passing Parameters to Applets, Aligning the Display, More About HTML Tags, Displaying Numerical Values, Getting Input from the User. (12 Hrs)

6. **Graphics Programming, Input / Output: Graphics Programming:** Introduction, The Graphics Class, Lines and rectangles, circles, and Ellipses, Drawing Arcs, Drawing Polygons, Line Graphs, Using Control Loops in Applets, Drawing Bar Charts. **Managing Input / Output Files in JAVA:** Introduction, Concept of Streams, Stream Classes, Byte Stream Classes, Character Stream Classes, Using Streams, Other Useful I/O Classes, Using the File Class, Input/Output Exceptions, Creation of Files, Reading/Writing Characters, Reading/Writing Bytes, Handling Primitive Data Types, Concatenating and Buffering Files, Interactive Input and output, Other Stream Classes. (10 Hrs)

Text Books:

- 1) Shishir Gundavaram, *CGI Programming on the World Wide Web*, O'Reilly and Associates, (1996). (Chapter 1 – 7)
- 2) E. Balaguruswamy, *Programming with JAVA, A Primer*, 2nd Edition., TMH (1999), (Chapter 2 – 16)
- 3) Hathleen Halata, *Internet Programming with VB Script and Java Script*, Thomson Pub 2005.

References:

- 1) Thomas Boutel, *CGI programming in C and Perl*, Addison – Wesley, (1996).
- 2) Jeffrey Dwight et al, *Using CGI, (Second Edition)*, Prentice Hall, India, (1997).
- 3) Darrel Ince & Adam Freeman, *Programming the Internet with Java*, Addison – Wesley, (1997).
- 4) Ken Arnold & James Gosling, *The Java Programming Language*, Addison – Wesley, (1998)
- 5) Patrick Naughton & Herbert Schildt, *JAVA 2: The Complete Reference*, 3rd Edition, TMH, (1999).
- 6) Schildt: *JAVA The Complete Reference 7/e*
- 7) Khalid Mughal : *JAVA Actually*, 1st Edition 2008. Cengage Learning India
- 8) Wigglesworth : *JAVA Programming Advanced Topics 3rd Edition*, 2008, Cengage Learning India.

BCA504P – JAVA PROGRAMMING Lab

1. Write a program to find factorial of list of number reading input as command line argument.
2. Write a program to display all prime numbers between two limits.
3. Write a program to sort list of elements in ascending and descending order and show the exception handling.
4. Write a program to implement Rhombus pattern reading the limit form user.
5. Write a program to implement all string operations.
6. Write a program to find area of geometrical figures using method.
7. Write a program to implement constructor overloading by passing different number of parameter of different types.
8. Write a program to create student report using applet, read the input using text boxes and display the o/p using buttons.
9. Write a program to calculate bonus for different departments using method overriding.
10. Write a program to implement thread priorities.
11. Write a program to implement thread, applets and graphics by implementing animation of ball moving.
12. Write a program to implement mouse events.
13. Write a program to implement keyboard events.

BCA505P – PROJECT

BCA 506P - SOFT SKILLS & PERSONALITY DEVELOPMENT

The self concept : What is attitude? The process of attitude formation. You are the chief architecture of your self .Self management techniques.

Believe in your self : Self image and self esteem ,Building self confidence ,Environment we mix with, how to build self image ? ,Meaning and definition of personality.

Personal planning and success attitude : Prioritizing, creating the master plan , active positive visualization and positive attitude, How to build a success attitude, Spot analysis .

Self motivation & communication : Levels of motivation ,power of irresistible enthusiasm ,etiquettes and manners in a group, public speaking, oral and written communication , Body language, Importance of listening and responding, Tips for technical writing .

Leadership as a process : co-ordination while working in a team, Leadership styles, Leader & Team player , Management of conflict, Profiles of great and successful personalities, Role of career planning in personality development, How to face personal interviews and group discussions.

Reference books :

- 1) *Wallace : Personality Development 1st Edition, 2008 Cengage Learning India*
- 2) *Succeed for your self -Richard Denny (3rd edition)- Kogan page India*
www.vivagroupindia.com
- 3) *Unleashing Leadership – John Hoover & Angelo Valenti – Jaico publishing House –*
WWW.JAICOBOKS.COM
- 4) *Kundu, C.I.- Personality development, Sterling Bangalore.*
- 5) *Listening and Responding – Sandra D.Collins-Cengage Learning India*
- 6) *1,001 ways to inspire your organization, your team and your self – David E. Rye-*
Jaico publishing house

Objectives of the course

1. To provide an understanding of what is personality and what are the processes of developing one 's personality.
2. To make a student aware of his or her role in different settings such as son, daughter, sister, brother ,neighbor ,citizen and so on.
3. To create awareness about physical, intellectual, emotional, social, educational aspects of personality.
4. To provide skills of written and oral communication with focus on skill development.

Methodology of testing evaluation will be given in the beginning of the semester. Group discussions, case studies, presentations mock interviews are the general methods to be followed apart from conventional training and coaching.

SIXTH SEMESTER

BCA601T – DESIGN AND ANALYSIS OF ALGORITHMS

Introduction: Definition of algorithm, Characteristic of algorithm, Different Control Structures, Writing Structured Programs, Analysis of algorithm (7 hrs)

Divide and Conquer: General Method, Binary Search, Finding Maximum & Minimum., Merge Sort, Quick Sort. (10 hrs)

Greedy Method: General method, Knapsack Problem, Job Sequencing with deadline, Minimum – cost Spanning trees, Single – Source Shortest Paths (10 hrs)

Dynamic Programming: Introduction to Graphs, Definition types, Terms related to graph, General Method, Multistage Graphs, All pair Shortest Paths, 0/1 – knapsack, The traveling salesperson problem, Flow Shop Scheduling. (10 hrs)

Basic traversal & Search techniques: Search & traversal techniques for trees, Search & traversal techniques for graphs. (8 hrs)

Backtracking: General method, The 8- Queens Problem, Sum of subsets, Graph Coloring. (7 Hrs)

Text books:

1. Aho Ullman & Hopkraft "Design & analysis of Algorithms".
2. Sara Baase, Allen Van Gelder, Computer Algorithms , Introduction to design and Analysis, 3rd edn (9th reprint), Pearson, 2005.
3. Design & Analys of alogorithm- Horowitz & Sahni
4. Fundamentals of Computer algorithm – Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran.

References:

1. Berman : Algorithms , 1st Edition 2008, Cengage Learning India

BCA602T – SYSTEMS PROGRAMMING

Background: Machine Structure, Evolution of the Components of a Programming System., Assembler, Loaders, Macros, Compilers, Formal Systems. (3 Hrs)

Machine Structure, Machine Language and assembly language.: General Machine Structure, Machine Language, Assembly Language (8 Hrs)

Assemblers: General Design Procedure, Design of assembler, Statement of Problem, Data structure, Format of databases, algorithm, look for modularity, Table Processing: Searching and Sorting., The problem, Searching a table, linear Search, binary Search, Sorting, interchange sort, Shell Sort, Bucket Sort, Radix Exchange Sort, address calculation sort, comparison of sorts, hash or random entry searching. (10 Hrs)

MACRO LANGUAGE AND THE MACRO PROCESSOR: Macroinstruction, Features of macro facility, Macro instruction arguments, conditional macro Expansion, macro calls within macros, macro instructions defining macros., Implementation, Statement of problem, implementation of a restricted facility, A two pass algorithm. A single pass algorithm, implementation of macro calls within macros. Implementation within an assembles. (10 Hrs)

LOADERS: Loader schemes, Compile & go, General loading Scheme, absolute loaders, Subroutine Languages, Relocating loaders, Direct linking loaders, other loading Schemes – Binders, linking loaders, Overlays, Dynamic binders. Design of absolute loader., Design of a Direct linking loader Specification of problem, Specification of data structure, format of data bases algorithm. (10 Hrs)

COMPILERS: Statement of problem, Problem1: Recognizing basic Elements, Problem2: Recognizing Syntactic cutis & interpreting meaning, Problem3: Storage allocation., Problem4: Code Generation. Optimization (machine independent) optimization(machine dependent), Assembly Phase, General model of compiler (6 Hrs)

PHASES OF COMPILERS: Simple Structure of Compiler, Brief introduction to 7 Phases of Compilers, (5 Hrs)

Text books:

1. John J. Donowon , *System Programming, TATA McGraw-Hil.*
2. Beck: *System Software, 3/e Pearson Education*

References:

1. Dhamdhere: *System programming and Operating System TMH*

BCA603T – COMPUTER GRAPHICS

Total: 52 Hrs

Graphics Systems : Application of CG, CG classification-Graphic softwares- CRT Functioning- Factors Affecting CRT- Raster scan System – Shadow mask method, Display Processor with raster system- Raster co-ordinate system- color mapping- Instruction set and Raster System applications. (6 hrs)

Output Primitives : Line drawing methods-Direct, DDA and Bresenhams, line attributes, - Circle drawing-Direct and midpoint circle drawing-Ellipse Drawing- Bresenhams Ellipse Algorithm-Area filling- scan- line area filling and character attributes. (8 hrs)

Two dimensional Transformation :Basic Transformation, Translation, Rotation, Scaling- Reflection and Sheer matrix representations- Homogeneous co-ordinates- composite transformation- Raster methods for transformation. (8 hrs)

Windowing and Clipping : Viewing Transformations, Clipping process, Point clipping, Line Clipping, Cohen Sutherland line clipping algorithm, Midpoint Subdivision algorithm, Area clipping, Sutherland and Hodgeman Polygon clipping Algorithm, Text clipping. (6 hrs)

Three Dimensional Graphics : 3D-coordinate system, 3D-Display techniques, 3D-transformations, Polygon surfaces, Octrees, Bezier curves, Hidden surface removal, Depth buffer and scan-line method. (6 hrs)

Segments : Introduction, functions for segmenting, display file, segment attributes, display file compilation. (6 hrs)

Graphical Input Techniques : Positioning techniques, Grid, Constraints, Dynamic manipulation, Gravity field, Rubber band, Selection technique, Menu, Pointing and selection by naming. (8 hrs)

Graphical Input Devices : Keyboards, Mouse, Joystick, Touch Panels, Track ball (4 hrs)

Text Books:

1. *Donald Hearn & M. Pauline Baker, Computer Graphics C version, PHI 1990*
2. *Steven Harrington, Computer Graphics, MCGH.*

References:

1. *Newman & Sproull, Principles of Interactive Computer Graphics, McGraw Hill.*
2. *Yeshwant Kanetkar, Graphics Under C, BPB publications.*
3. *J.D. Foley, A.V. Dam, S.K. Feiner & J.F. Hughes, Computer Graphics, Addison Wesley, 1997.*
4. *Cooley, The Essence of Computer Graphics, Pearson Education*
5. *Sinha - Computer Graphics*

BCA604T - WEB PROGRAMMING

Total Hours : 52

Fundamentals of Web

15 Hrs

Internet, WWW, Web Browsers, and Web Servers, URLs, MIME, HTTP, Security, The Web Programmers Toolbox. XHTML: Origins and evolution of HTML and XHTML, Basic syntax, Standard XHTML document structure, Basic text markup, Images, Hypertext Links, Lists, Tables, Forms, Frames, Syntactic differences between HTML and XHTML.

CSS

6 Hrs

Introduction, Levels of style sheets, Style specification formats, Selector forms, Property value forms, Font properties, List properties, Color, Alignment of text, The Box model, Background images, The and <div> tags, Conflict resolution.

JavaScript

10 Hrs

Overview of JavaScript; Object orientation and JavaScript; General syntactic characteristics; Primitives, operations, and expressions; Screen output and keyboard input; Control statements; Object creation and modification; Arrays; Functions; Constructor; Pattern matching using regular expressions; Errors in scripts; Examples.

JavaScript and HTML Documents, Dynamic Documents with JavaScript

15 Hrs

The JavaScript execution environment; The Document Object Model; Element access in JavaScript; Events and event handling; Handling events from the Body elements, Button elements, Text box and Password elements; The DOM 2 event model; The navigator object; DOM tree traversal and modification.

Introduction to dynamic documents; Positioning elements; Moving elements; Element visibility; Changing colors and fonts; Dynamic content; Stacking elements; Locating the mouse cursor; Reacting to a mouse click; Slow movement of elements; Dragging and dropping elements.

5. XML

6 Hrs

Introduction; Syntax; Document structure; Document Type definitions; Namespaces; XML schemas; Displaying raw XML documents; Displaying XML documents with CSS; XSLT style sheets; XML processors; Web services.

Text Books

1. *Robert W. Sebesta: Programming the World Wide Web, 4th Edition, Pearson Education, 2008. (Chapters 1 to 9)*

Reference Books

1. *M. Deitel, P.J. Deitel, A. B. Goldberg: Internet & World Wide Web How to program, 3rd Edition, Pearson Education / PHI, 2004.*
2. *Chris Bates: Web Programming Building Internet Applications, 3rd Edition, Wiley India, 2006.*
3. *Xue Bai et al: The Web Warrior Guide to Web Programming, Thomson, 2003*
4. *Sklar : Principles of web design , 1st Edition, 2008 Cengage Learning India*
5. *Sklar : The Web Warrior Guide to Web Design Technologies, 1st Edition, Cengage Learning India*

BCA604P - Web Programming Lab

1. Create a form having number of elements (Textboxes, Radio buttons, Checkboxes, and so on). Write JavaScript code to count the number of elements in a form.
2. Create a HTML form that has number of Textboxes. When the form runs in the Browser fill the textboxes with data. Write JavaScript code that verifies that all textboxes has been filled. If a textboxes has been left empty, popup an alert indicating which textbox has been left empty.
3. Develop a HTML Form, which accepts any Mathematical expression. Write JavaScript code to Evaluates the expression and Displays the result.
4. Create a page with dynamic effects. Write the code to include layers and basic animation.
5. Write a JavaScript code to find the sum of N natural Numbers. (Use user-defined function)
6. Write a JavaScript code to find factorial of N. (Use recursive function)
7. Write a JavaScript code block using arrays and generate the current date in words, this should include the day, month and year.
8. Create a form for Student information. Write JavaScript code to find Total, Average, Result and Grade.
9. Create a form for Employee information. Write JavaScript code to find DA, HRA, PF, TAX, Gross pay, Deduction and Net pay.
10. Create a form consists of a two Multiple choice lists and one single choice list,

- The first multiple choice list, displays the Major dishes available.
- The second multiple choice list, displays the Starters available.
- The single choice list, displays the Soft drinks available.

The selected items from all the lists should be captured and displayed in a Text Area along with their respective costs. On clicking the 'Total Cost' button, the total cost of all the selected items is calculated and displayed at the end in the Text Area. A 'Clear' button is provided to clear the Text Area.

11. Write a JavaScript code block, which checks the contents entered in a form's Text element. If the text entered is in the lower case, convert to upper case. Make use of function to Uppercase ().
12. Create a web page using two image files, which switch between one another as the mouse pointer moves over the images. Use the onMouseOver and onMouseOut event handlers.

BCA605P –PROJECT

5786-BUP- 300- June 2011

BANGALORE



UNIVERSITY

SYLLABUS

for the course

MASTER OF COMPUTER APPLICATIONS (MCA)
I to VI Semesters

Revised w.e.f
Academic Year 2005 – 2006 and onwards

MCA SYLLABUS

I Semester

- (1) Digital Logic
- (2) Computer Programming and Problem Solving
- (3) Business Data Processing using COBOL
- (4) Discrete Mathematics and its applications
- (5) Probability and Statistics
- (6) Management skills and HRD
- (7) Computer Programming Lab using C High Level Language
- (8) COBOL Lab

II Semester

- (1) Data Structures
- (2) Operating Systems
- (3) Data Base Management System
- (4) Assembly Language Programming & Microprocessor
- (5) Object Oriented Programming concepts
- (6) Computational Numerical Methods
- (7) Data Structure Using C++
- (8) Assembly Language Programming LAB

III Semester

- (1) Theory of Computation
- (2) Design and Analysis of Algorithms
- (3) Software Engineering
- (4) Computer Networks
- (5) Elective I
- (6) Software Engineering mini Project
- (7) Operating System Mini Project
- (8) Soft Skills Lab

Electives

- (1) Computer Based Optimization Techniques
- (2) Computer Graphics and Visualization
- (3) Accounting & Financial Management

IV Semester

- (1) Internet Technologies
- (2) Object Oriented Analysis and Design using UML
- (3) Data Warehousing and Business Intelligence
- (4) Software Architecture
- (5) Elective II
- (6) Enterprise Computing mini project
- (7) JAVA Programming Lab
- (8) Elective II Mini Project

Electives

- (1) Compiler Design
- (2) Network Programming
- (3) Multimedia Communication

V Semester

- (1) Elements of Artificial Intelligence
- (2) E-Commerce
- (3) Distributed and Parallel computing
- (4) Network and Information Security
- (5) Elective III
- (6) Software project Management Lab
- (7) LINUX Programming Lab
- (8) Elective III Lab

Electives

- (1) Simulation & Modeling
- (2) Embedded Systems
- (3) Bioinformatics
- (4) Neural Networks

VI Semester

Project Work

DIGITAL LOGIC

Prerequisite: NIL

Digital Computer and Information: Digital Computers, Number Systems, Arithmetic Operations, Decimal Codes, Alphanumeric Codes.
(Article 1.1 to 1.5 of Text 1)

Combinational Logic Circuits: Binary Logic and Gates, Boolean algebra, Standard forms, Map Simplification, Map Manipulation, NAND and NOR Gates, Integrated Circuits.
(Article 2.1 to 2.8 of Text 1)

Combinational Logic Design: Combinational Circuits, Design Topics, Analysis Procedure, Design Procedure, Decoders, Encoders, Multiplexers, Binary adders, Binary Subtraction, Binary adder-subtractors, Binary Multipliers, Decimal Arithmetic.
(Article 3.1 to 3.11 of Text 1)

Sequential Circuits: Sequential Circuit Definitions, Latches, Flip-Flops, Sequential Circuit Analysis, Sequential Circuit Design.
(Article 4.1 to 4.5 of Text 1)

Registers and Counters: Definition of Register and Counter, Registers, Shift Registers, Ripple Counter, Synchronous Binary Counters, Other Counters.
(Article 5.1 to 5.6 of Text 1)

Memory and Programmable Logic Devices: Memory and Programmable Logic Device, Random-access Memory, RAM integrated Circuits, Array of RAM ICs, Programmable Logic Technologies.
(Article 6.1 to 6.5 of Text 1)

Instruction Set Architecture: Computer Architecture Concepts, Operand Addressing, Addressing Modes, Instruction set Architectures, Data manipulation Instructions, Floating point Computation, Program Control Instruction, Program interrupts.
(Article 9.1 to 9.9 of Text 1)

Text Books:

- (1) M Morris Mano, Charles R Kime. "*Logic and Computer Design Fundamentals*". Pearson Education, 2nd Edition, 2002.
- (2) Tokheim. "*Digital Electronics Principles and Applications*". Tata McGraw-Hill, 6th Edition, 2004.

References:

- (1) Malvino, Paul Albert and Leach, Donald P. "*Digital Principles and Applications*". Tata McGraw-Hill, 4th Edition, 2000.
- (2) Bartee, Thomas C. "*Digital Computer Fundamentals*". Tata McGraw-Hill, 4th Edition, 6th Edition, 1995.

COMPUTER PROGRAMMING AND PROBLEM SOLVING

Prerequisite: NIL

Basics of Programming: Algorithm, flowchart and psueduocode.

Introduction to C: Development of C, features, constants and variables, data types, operators and expressions, library functions.

I/O Statements: Formatted and unformatted I/O, scanf(), printf(), getchar() and putchar() functions.

Control Structures: Conditional and unconditional, if, for,while and do....while,switch,break and continue, goto statement.

Arrays: One and multi dimensional arrays, strings and string functions, bubble sort , linear and binary search, Predefined streams, sscanf (), sprintf() .

Functions: Definition, different types, advantages, calling a function, passing Parameters call by reference and call by value, local and global variables, recursive functions.

Pointers : Introduction , Features of Pointers , Pointer Declaration, Arithmetic Operations with Pointers, Pointes and Arrays, Pointers and Two dimensional Arrays, Array of Pointers, Pointers to Pointers ,Pointers and strings, void pointers.

Structures and Unions: defining a structure, Classification, union, user-defined data types, pointer to a structure, and structure as an argument to a function, Bit fields, Calling BIOS and DOS services.

Macros: Definition, preprocessor, macro classification, #if, #elseif, #endif, #define.

Storage classes: different types, enumerated data type, register storage class, bitwise operators.

Files: Introduction, streams and File types, Steps for file operations, File I/O, Structures Read and Write, File functions, Searching Errors in Reading /Writing Files, Low level Disk I/O , Command line Arguments, Environment Variables, I/O Re Direction.

Text Book:

1 . Programming with ANSI and Turbo C- Ashok N. Kamthane-Pearson Education-2002.

Reference Books :

1.C Complete reference

2.C: How to Program 3/e , Deitel Pearsons Education.

3. Let us C Yeswanth kanitkar

BUSINESS DATA PROCESSING USING COBOL

Prerequisite: Basic programming knowledge

Introduction: Advantages, disadvantages of COBOL, elements of COBOL, COBOL words, Data Names, Literals, Structure of a COBOL program, Divisions of COBOL

Identification division & environment division

Data division: File Section, FD level indicator, Level numbers, Picture Clauses, Working- Storage section, Accumulators, Data categories, Editing patterns, Screen section.

Procedure division: Accept, Display, Stop run statements.

Simple Arithmetic statements: Add, subtract, multiply, divide, compute statements, move, group move, elementary move, Evaluate, Data validation- Class test, sign test, Value test, Range test, Presence or absence test, Evaluate Statement.

Control structures: If, compound test condition, nested if, go to, go to with depending option, perform statements- simple perform, perform with through option, times option, until option, varying option, varying after option In-line perform statement.

Arrays: One dimensional Embedded tables-Occurs clause, Subscripts, one dimensional, non-embedded tables-Indexes vs. subscripts, Searching tables- Linear search, Binary search, Variable length tables, Multi dimensional tables.

Subroutines: Introduction, calling a subroutine, passing parameters, String manipulations

File System : Files - Master File, transaction file, report file, work file, program file, text file, file organizations- sequential, indexed, relative file organizations, types of file access, file operations- sequential file organization-deleting a file, logical and physical description of file, open, close, write, read statements, creation, sorting, merging of indexed files, invalid key clause, read statements, read write statements, delete statements, relative file organization creation, Inspect statement

Object Oriented COBOL- Driver Program, Defining class and an Object, Creating an instance of an Object, writing simple programs.

Text Books:

1. Shelly, Cashman,Foreman "*Structured COBOL programming*". Second Edition,Thomson Publishers (Chapters 1 to 10).
2. Stern and Stern: "*Structured COBOL programming*". Wiley Publications, 9th Edition.

References:

1. M.K.Roy & Dastidar: "*COBOL Programming*". Tata Mc-Graw Hill.

DISCRETE MATHEMATICS AND ITS APPLICATIONS

Prerequisite: NIL

Unit – I : Logic, Sets and functions: Logic, Propositional equivalences, predicates and quantifiers, nested quantifiers, Methods of proof, Sets, Set operations, and functions. Integers and Matrices: Integers and Division, Integers and Algorithms, Applications of Number theory, Matrices.

Unit – II : Induction and Recursion: Sequences and summations, Mathematical Induction, Recursive Definitions and Structural Induction, Recursive algorithms. Counting: Basics of counting, Pigeonhole Principle, Permutation and Combinations, Binomial coefficients, Generalized Permutations and Combinations.

Unit – III: Discrete Probability: Introduction, Probability Theory, Expected value and Variance. Advanced Counting Techniques: Recurrence relations and its solutions, Generating functions, Inclusion – Exclusion and its applications Relations: Introduction, n-ary relations and applications, Representing relations, Closures of Relations, Equivalence Relations, Partial Orderings

Unit – IV : Graphs: Introduction, Representing Graphs & Graph Isomorphism, Connectivity, Euler and Hamilton Paths, Shortest path problems, Planar Graphs, Graph colorings Trees: Introduction, Applications of Trees, Tree Traversal, Spanning Trees, Minimum Spanning Trees.

Unit – V: Groups, Rings, Fields and Algebras: Introduction to Group Theory, Subgroups, Cyclic Groups, Cosets and Lagrange's Theorem, Codes and Group Codes, Homomorphism of Groups, Normal Subgroups (in detail as in LIU) Rings, Integral Domain and Fields(definitions and basic properties only, Statement of theorems, not the proofs) Boolean Algebras: Lattices and Algebraic Systems, Basic Properties of Lattices, Types of Lattices, Boolean Functions and Boolean Expressions.

Text Books:

1. Discrete Mathematics and its Applications- Kenneth H Rosen- 5th edition, Tata McGraw-Hill, 2003. ISBN 0-07-242434-6(Unit I to IV from this book)
2. Elements of Discrete Mathematics-C.L.Liu, 2nd edition, Tata McGraw-Hill, 7th reprint,2002, ISBN 0-07-043476-X (unit -V from this book, Chapter 11 & 12)

Reference Books:

1. Discrete Mathematical Structures with its applications to Computer Science-Tremblay & R. Manohar - Tata McGraw-Hill, ISBN 0_07-065142-6
2. Mathematics –A Discrete Introduction- Edward R. Scheinerman ,1st reprint 2001, ISBN 981-240-092-3, Thompson Learning.

PROBABILITY AND STATISTICS

Prerequisite: Basic Knowledge of mathematics

Introduction: Data and Information. Importance of data processing techniques in information technology. Applications of probability and statistics in computer science. Basic Statistical concepts.

Data analysis: Frequency Distribution, Graphical presentation – Histogram, frequency curve and ogive curve. Stem and Leaf chart, Tukey's Box plot. Central tendency dispersion and relative dispersion their measures and properties

Probability: Probability: Basic concepts. Elementary properties of probability. Additive law, conditional probability, independence of events, multiplicative law. Bayes' theorem and its applications.

Random variables and probability distribution: Random variables. Discrete and continuous random variables. Probability mass function and probability density function. Expectation, variance and moments. and its properties.

Some standard discrete and continuous distributions: Discrete distributions – Binomial, Poisson, geometric and negative binomial distributions- their mean, variance and properties. Continuous distributions- exponential, gamma and normal distributions. Their properties.

Bivariate distributions: Bivariate distributions: Joint, marginal, conditional distributions for discrete and continuous variates. Covariance and correlation coefficient. Independence of random variables. Addition and multiplication theorems of expectation.

Correlation and Regression: Fitting of linear, quadratic, exponential to the given set of data by the principle of least squares. Product moment correlation coefficient and its properties.. Linear regression and multiple linear regression. Rank correlation.

Sampling Distributions: Sampling distribution and Standard error. Sampling distribution of the sample mean. Definition of Chi-square, t and F distributions. Central limit theorem

Statistical Inference: Statistical hypotheses. Type-I and Type-2 errors, level of significance, size and power of a test Tests for the mean, equality of two means, variance and equality of two variances (for large and small samples). Large sample tests for proportions. Chi-square test for goodness of fit and for independence of attributes in contingency tables. Confidence interval. Analysis of variances. Analysis of one-way and two-way classified data

Text Books:

1. Ronald E Walpole & Raymond H Myers, Sharon L Myers: "*Probability & Statistics for Engineers and Scientists*". Sixth Edition. Prentice Hall.

References:

1. Trivedi et. al : "*Probability and Statistics with Computer Applications*". Tata McGrawhill.
2. Gupta,S.c and Kapoor,V.K: "*Fundamentals of mathematical statistics*". Sultan chand & Co.

Management skills and HRD

Unit I - HRM: An Overview

12 hrs

1. **Foundations of human resource management:** HRM and personnel management; Human resource management defined; Aims and concerns of HRM; Characteristics of HRM; Key HRM activities; The challenge to HRM.
2. **The role of the HR practitioner:** Activities; Roles; Ethical considerations; Professionalism in human resource management; How to be an effective HR practitioner; Competence in HR Management.
3. **Managing the HR function:** Role of the HR function; Variations in HR practice between different organizations; Changes in the scope of the HR function; Integrating the HR contribution; Organizing the HR function; Respective roles of HR and Line management; Gaining support and commitment; Marketing the HR function; Outsourcing HR work;
4. **Contribution of the HR function:** Contribution to added value; contribution to competitive advantage; Contribution to Quality Management; Impact of people management on business performance;
5. **Evaluating the HR function:** Approaches to evaluation; Methods of evaluation; Types of performance measures; Evaluation criteria; Practical methods of evaluation; Preferred approach.
6. **International human resource management:** International human resource management defined; The challenge of International HRM; International employment and development strategies; Recruitment across international boundaries; International employee development; managing expatriates; International pay.

Unit II - HRM Processes

8 hrs

1. **Strategic HRM:** Definition and aim of strategic HRM; Strategic HRM and strategic management; Meaning of strategic HRM; HR strategies; Formulating HR strategies; Key issues; Developing integrated HR strategies.
2. **Human resource policies:** What are human resource policies; why human resource policies; HR policy areas; formulating or revising policies.
3. **Competency-based human resource management:** The concept of competence and competency; Constituents of competency; Types of competences; Describing competencies; Using the concept.
4. **Job, role and competence analysis:** Job analysis; Role and skill analysis; Competence analysis; Job descriptions; Role definitions.

Unit III - Employee Resourcing

24 hrs

1. **Human resource planning:** Importance and relationship with strategic planning; Elements of effective HRP; Internal assessment of the workforce; Forecasting HR supply and demand; Human resource information systems (HRIS).

2. **Recruitment:** Defining requirements; Attracting candidates; Advertising; Outsourcing recruitment; Sifting applications; Recruiting within the organization; Recruiting outside the organization; Recruiting protected classes; Internet recruiting
3. **Selection:** Matching people and jobs; Sources of information about candidates; Selection tests and interview; Background investigation; Reaching a selection decision.
4. **Induction:** Importance of induction; Reception; Documentation; Introduction to the workplace; formal induction courses; on-the-job induction training.
5. **Retention:** Importance; Determinants; Retention management process.
6. **Release from the organization:** General considerations; Redundancy; Outplacement; Dismissal; Voluntary leavers; Retirement.

Unit IV – Appraising and Managing Performance

6 hrs

1. **The appraisal process:** The supervisor's role; Steps in appraising performance; Uses of performance appraisal; Who conducts appraisals?
2. **Appraisal methods:** Trait methods; Behavioral methods; Results methods; Computerized and web-based performance appraisal.
3. **Appraisal interviews:** Types of appraisal interviews; Conducting the appraisal interview; Improving performance.
4. **Appraising performance (problems and solutions):** Dealing with rating scale appraisal problems; How to avoid appraisal problems; Legal and ethical issues.

Unit V – Compensation

10 hrs

1. **Determining pay rates:** Legal considerations in compensation; Union influences on compensation decisions; Corporate policies and competitive strategy; Equity and its impact on pay rates.
2. **Establishing pay rates:** The salary survey; Job evaluation; Group similar jobs into pay grades; Price each pay grade; Fine-tune pay rates
3. **Pricing managerial and professional jobs:** Compensating managers; Compensating professional employees.
4. **Compensation trends:** Skill-based pay; Broadbanding; Compensation plans in practice; Compensation plans for Dot-Com companies; Comparable worth.
5. **Incentives for managers and executives:** Short-term incentives (the annual bonus); Long-term incentives.

Text Books:

Mathis, Robert L. & Jackson, John H. (2003). Human Resource Management – 10th edition. Thomson Pub. ISBN 981-243-511-5

Dessler, Gary. (2003). Human Resource Management – 9th edition. Pearson Education.

Bohlander, G., Snell, S. & Sherman, A. (2001). Managing Human Resources – 13th edition. Thomson Pub .ISBN 981-243-509-3

References:

Armstrong, Michael. (1999). A Handbook of Human Resource Management Practice – 7th edition. Kogan Page.

Reference scheme

Units	Topic	Reference
I	HRM: An Overview	Armstrong
II	HRM Processes	Armstrong
III	Employee Resourcing	Armstrong + Bohlander + Mathis
IV	Appraising and Managing Performance	Bohlander + Dessler + Mathis
V	Compensation	Dessler

C PROGRAMMING LAB

SECTION A

1. Write a program to print whether the number entered is even or odd use conditional operators.
2. Write a program to convert hexadecimal to decimal numbers
3. Write a program to display list of C program files and directories.
4. Write a program to ensure that the difference between any two digit number and its reverse is always a multiple of nine.
5. Write a program to display number of days in calendar format of an entered month of current year.
6. Write a program to display the numbers in increasing and decreasing order using infinite loop.
7. Write a program to accept a number and find the sum of its individual digits repeatedly till the result is a single digit.
8. Write a program to enter integer number and find the largest and smallest digit of the number.
9. Write a program to read three digits +ve integer number 'n' and generate possible permutations of number using their digits.
10. Accept a text upto 50 words and perform following actions
 - a) Count total vowels, constants, spaces, sentences and words with spaces.
 - b) Program should erase more than one space between two successive words.
11. Write a program to enter names of cities and display all the entered names alphabetically.
12. Write a program to enter some text and display the text in reverse order(Eg. I am happy as Happy am I).

SECTION B

13. Write a program to calculate the result of the following with recursive calls of function.
$$X = 1! + 2! + 3! + \dots + n!$$
14. Write a program to use macros as an array and pointer.
15. Write a program to display the attributes of a file using dos interrupt.
16. Write a program to delete a file using dos interrupt.
17. Create user defined data type equivalent to int. Declare three variables of its type. Perform arithmetic operations using these variables.
18. Write a program to reboot the system. Use following data with int 86() function.
 - a) Interrupt 0x19.
 - b) Input Void(nothing)
19. Write a program to read a C program file and count the following in the complete program.
 - a) Total number of statements
 - b) Total number of included files
 - c) Total number of brackets.
20. Write a program to display C Program files in current directory. The user should select one of the files. Convert the file contents in Capital and Display the same on the screen.
21. Write a program to delete the given file from the disk.
22. Write a program to read the contents of three files and find the largest file.
23. Write a program to interchange the contents of two files.
24. Write a program to change mouse cursor.

COBOL LAB

SECTION – A

1. To convert seconds in to hours, minutes, and seconds.
2. Reverse a given number
3. Date validation
4. Develop a program illustrating the use of all editing characters
5. Finding the sum of the digits of N digit number.
6. Printing the fibonacci sequence between m and n ($m < n$)
- 7 Program to find the largest and its position from the given set of numbers.
8. Generate the prime numbers between m and n ($m < n$)
9. Matrix addition and subtraction
10. Finding the factorial using a subroutine.
11. Accept 3 data items: Empno, Name, Jobcode, B-pay. Use a
12. Subroutine to recalculate the B-pay as per the following. If the jobcode is 1 the add 1000. If it is 2 add 750. Else add 500.
13. Count the number of Occurrences of Specified character from the given string, Replace the specified character with the given character.

SECTION – B

14. Develop a program to create a sequential table
15. Develop a program to create an index sequential file.
16. Develop a program to create a relative file
17. Develop a program to Sort a sequential file
18. Develop a program for Indexed file updation
19. Develop a program to Merge two sequential files
20. Develop a program to Count the number of records, and search for a particular field.

DATA STRUCTURES

Prerequisite: Basic Programming knowledge

Algorithm Analysis: Pseudo code, The Abstract Data Type, A Model for an Abstract Data Type
(Article 1.1-1.4 of Text 1)

Searching: Linear List Searching, Linear Search C Algorithms, Hashed List Searches, Collision Resolution.
(Article 2.1 to 2.4 of Text 1)

Linear Lists: Linear List Concepts, Linked List, Linked List Algorithms, Processing a Linked List, Linear List Applications, Complex Linked List Structures, Building a Linked List – C implementation, Linked List Abstract Data Type
(Article 3.1 to 3.8 of Text 1)

Stacks: Basic Stack Operations, Stack – Linked List implementation, Stack Applications, ADT-Linked List Implementation, Array Implementation of Stack, ADT- Array Implication.
(Article 4.1 to 4.7 of Text 1)

Queues: Queue Operations, Queue- Linked List Implementation, Queuing Theory, Queue Applications, Categorizing Data – C Implementation, Queue – Linked List Implementation, Queues Array Implementation.
(Article 5.1 to 5.7 of Text 1)

Trees: Binary Tree Concepts, Binary Trees, Binary Tree Traversals, Expression Trees, General Trees.
(Article 7.1 to 7.5 of Text 1)

Search Trees: Binary Search Trees, AVL Trees; Multiway Trees: B-Tree, Simplified B-Tree, B-Tree variations.
(Article 8.1 to 8.2 and 10.1 to 10.4 of Text 1)

Graphs: Terminology, Operations, Graph Storage Structures, Graph Algorithms, Abstract Data Type
(Article 12.1 to 12.4 and 12.6 of Text 1)

Sorting: General Sort concepts, Insertion Sorts, Selection Sorts, Exchange Sorts.
(Article 11.1 to 11.4 of Text 1)

Text Books:

- (1) Richard F.Gilberg, Behrouz A. Forouzan, "Data Structures: A Pseudo code Approach with C". Thomson Asia Pvt. Ltd, 2002.

References:

- (1) Mark Allen Weiss, "Data Structures and Algorithm Analysis in C". Addison-Wesley, 1999.

- (2) Robert L. Kruse, Bruce P. Leung, Clovis L.Tondo, "*Data Structures and Program Design in C*". Prentice Hall India, 2001.

OPERATING SYSTEMS

Prerequisite: Basic Programming knowledge

Computer System Overview: Basic elements, Processor register, instruction execution, interrupts, the memory hierarchy, cache memory, I/O communication techniques.

(Article 1.1 to 1. of Text 1)

Operating System Overview: Operating System objectives and functions, the Evaluation of the Operating System, Major Achievements, Characteristics of modern Operating System, Windows 2000 overview, Traditional LINUX systems, moderns LINUX systems, System Calls.

(Article 2.1 to 2.8 of Text 1; Article 3.3 of Text 2)

Processes: Process states, Process description, Process control, LINUX SVR4, Process Management, Process & threads, SMP, Micro-Kernels, Windows 2000 thread & SMP management, Solaris thread & SMP Management, Linux process & thread Management, Uni-processor Scheduling: Types of Scheduling, Scheduling Algorithms, Traditional LINUX Scheduling. Process Synchronization: Critical section problem, Semaphores, Classical problems in synchronization. Deadlocks: Deadlocks characterization, Handling deadlocks, Prevention, avoidance and Detection of deadlocks.

(Article 3.1 to 3.4, 4.1 to 4.6, 9.1 to 9.3 of Text 1;
Articles 7.2 to 7.5, 8.1 to 8.7 of Text 2)

Memory Management: Basic concepts, Contiguous allocation, Paging, Segmentation, Demand paging, Page replacement algorithms, Thrashing, Operating System examples.

(Article 9.1 to 9.5, 10.1 to 10.7 of Text 2)

I/O & Files: I/O Management & Disk Scheduling: I/O Devices, Organization of the I/O functions, Operating System Design Issues, I/O Buffering, Disk Scheduling, RAID, Disk Cache, LINUX SVR4 I/O, Windows 2000 I/O. File Management: File Organization, File Directories, File Sharing, Record Blocking, Secondary Storage Management, LINUX File Management.

(Article 11.1 to 11.9, 12.1 to 12.7 of Text 1)

Distributed Systems: Client/Server Computing, Distributed message passing, Remote Procedure Call, Clusters, Windows 2000 cluster server, SUN Cluster, Beowulf & Linux Clusters

(Article 13.1 to 13.7 of Text 1)

Security: Security threats, Protection, Intruders, malicious software, Trusted Systems, Windows 2000 security.

(Article 15.1 to 15.6 of Text 1)

Text Books:

- (1) William Stallings. "Operating System". Fourth Edition, Pearson Education, 2001.

- (2) Silberschatz, Galvin, Gagne. *"Operating System Concepts"*. Sixth Edition, WSE Wiley, 2002.

References:

- (1) Andrew S. Tanenbaum, Albert S Woodhull. *"Operating System Desing & Implementation"*. Sixth Edition, Pearson Education, 2003.

DATABASE MANAGEMENT SYSTEMS

Prerequisite: Data and File Structures.

Introduction: Data, Information, Database, Database management system, characteristics, applications, costs and risks of DBMS approach, database users, DB languages, User interfaces.

DBMS Architecture: schema, three level schema, data models, conceptual. Logical and physical data models, logical and physical data independence.

Storage structure and file organization: Primary and secondary storage devices, sequential, indexed sequential, random file access, hashing techniques

E-R data model: Entities, attributes and relationships, different types of attributes, Drawing E-R diagrams.

Relational data model : Relation, Integrity constraints-domain, entity and referential integrity constraints, Relational algebra, select, project and join operations, Normalization concepts, first, second, Third normal forms, Boyce-Codd normal form, Projection-join normal form, SQL, data definition, data manipulation, sub queries, correlated subquery, transaction control, Concept of a view, advantages and updation.

Object oriented data base development: Introduction, defining a class, attribute, user structures, operations, range for an attribute, relationships, defining an abstract class, creating object instances, object query language

Data administration : Introduction, security issues, different methods of protecting the database, database encryption, types of database failure, recovery and concurrency control, different locks.

Distributed databases : Introduction, advantages and disadvantages.

Text books :

1. Elmasri & Navateh: "*Fundamentals of Database Systems*". Addison Wesley, Pearson Education, 3rd Edition.
2. Fred R McFadden, Jeffrey A Hoffer and Mary B Prescott: "*Modern Database management System*". 5th edition,

Reference books :

1. C J Date: "*Introduction to database systems*"
2. Korth and Silberschtz: "*Database System Concepts*"

OBJECT ORIENTED PROGRAMMING CONCEPTS

Prerequisite: Basic Programming Knowledge.

Introduction to Object-Oriented Programming: Evolution of programming methodologies, Procedural Approach Vs Object-Oriented Approach. Principles of OOP: Encapsulation, Inheritance and Polymorphism. Concepts of OOP: Abstraction, Overloading, Reusability, Extensibility, Dynamic Binding, Message Passing.

Introduction to Objects and Classes: Defining the class, Defining Data members and member functions, Creating Objects of Class, Access Specifiers - private, public, and protected, Scope Resolution Operator, Friend Functions and Friend Classes - Static Members - Difference between class and structure.

Constructors and Destructors: Purpose of Constructors and Destructors, Default Constructors, Constructors with & without parameters, Constructor Overloading, Copy Constructor, Convert Constructor - Invoking Constructors and Destructors.

Polymorphism: Overloading Concepts, **Function Overloading:** Functions with different sets of parameters, default and constant parameters. **Operator Overloading:** Defining Operator Function, Rules for overloading Operators. Overloading unary operator, overloading binary operator, Overloading Comma, [], (), -, new, delete Operators. **Type Conversions:** Basic to Class, Class to Basic and one Class to another Class type. Advanced Type Casting.

Inheritance: Basic Concepts, Reusability & Extensibility. Defining derived classes, protected access specifier in Base class - public, private & protected inheritance - constructors and destructors in derived classes - Types of Inheritances. **Virtual Functions:** Normal member functions accessed with pointers, virtual member function access, late binding, pure virtual function, abstract classes, virtual base class.

Pointers in C++: Pointer declaration and Access, Pointer to void, pointer and arrays, pointer to pointer, pointer to functions, call by pointer, pointer arrays, Ragged array, array of pointers to string, pointer sort, memory management - new and delete, pointer to object - referencing members using pointers, self referencing class, this pointer, returning values using this pointer, wild pointers.

Templates: Generic Functions- A generic swap function, Functions with more than one Generic Type, Overloading a Function Template. Generic Classes - A stack generic class, Class template with more than one Generic Type, typename and export keywords, Templates Restrictions, The power of Templates.

Exception Handling: Fundamentals of Exception Handling, Catching Class Types, Using Multiple catch statements, Catching All Exception, Restricting Exception, throw statement, Setting the Terminate and Unexpected Handlers, Uncaught exception, bad exception Classes, and Built-In Exceptions. Exception Vs Error Handling, Assertion in C++.

Console I/O operations: C++ streams and C++ stream classes - Predefined Objects, unformatted I/O operations, Formatted I/O operations - manipulators - User defined manipulators - Overloading << and >> Operators for Objects.

Disk I/O Operations (Files): Stream Classes, classes for file stream operations, opening and closing a file, file nodes, writing an object to disk, reading an object from disk, binary versus character files, I/O with multiple object, fstream class, file pointer specifying the position, specifying the object, tellg() and seekg(), seekp() and tellp().

Text Books

1. Stevens, Al. "*Starting out with C++*". 2nd Edition. Wiley Dreamtech.
2. Schildt, Herbert. "*C++: The Complete Reference*". 4th Edition. Tata-McGraw-Hill.

Reference Books

1. Deitel H M and Deitel P J. "*C++ How to Program*". 4th Edition. Pearson Education.
2. Nagler, Eric. "*Learning C++*". 3rd Edition. Thomson Education.

COMPUTATIONAL NUMERICAL METHOD

PART I: Error Analysis. Polynomial, Algebraic and Transcendental Equations – Bisection method. Fixed point iterative methods. Secant method. Newton-Raphson method. Rates of convergence. Acceleration of convergence by Aitkin's method. Graeffe's Root squaring method. Computer programs for Bisection method, Secant method, Newton Raphson Method, Graeff's Root Squaring method.

PART II: Systems of Linear equation. Solution by direct methods. Gaussian Elimination method. Gauss-Jordan method. LU- decomposition method. Cholesky's method. Iterative methods of Jacobi and Gauss-Seidel. Relaxation methods. Convergence analysis. Eigen values and Eigen vectors of Square matrices. Gerschgorin theorem. Jacobi and Givens method for symmetric matrices. Power method. Computer programs for Gauss elimination method, Gauss-Jordan method, LU-decomposition method, Jacobi's method, Gauss-Seidel method, and Power method.

PART III: Lagrange and Newton interpolation formulae. Numerical differentiation. Numerical Integration. Newton-Cotes methods. Computer programmes for Lagrange Interpolation method and Simpon's Quadrature Rule.

PART IV: Numerical solution of ordinary differential equations. Euler and Picard methods. Runge Kutta methods. Computer programs.

Text Book

- (1) K Shankar Rao, "*Numerical Methods for Scientists and Engineers*". 2nd Edition, Prentice-Hall publications,
- (2) Gerald & Wheatly, "*Applied Numerical Analysis*", Prentice-Hall publications.
- (3) M.K. Jain, S.R. Iyengar & R.K. Jain – Numerical methods for Scientific and Engineering Computation, 2nd Edition, Wiley Eastern, 1987

References:

- (1) E V Krishnamurthy and S K Sen, "Numerical Algorithms". East West Press Pvt Ltd.,

ASSEMBLY LANGUAGE PROGRAMMING AND MICROPROCESSOR

Microprocessor Architecture and Microcomputer systems: Microprocessor Architecture and its Operations, Memory, Input and output (I/O) Devices, Example of a microcomputer system.

8085 Microprocessor and Memory interfacing: The 8085 MPU, Example of an 8085 – Based Microcomputer, Memory interfacing, The SDK-85 Memory system, how does an 8085 – Based single – Board Microcomputer work?

Interfacing I/O devices: Basic Interfacing Concepts, Interfacing Output Displays, Interfacing Input devices, Memory-Mapped I/O.

PROGRAMMING THE 8085/8080A

Introduction to 8085/8080A Assembly Language Programming: The 8085/8080A Programming model, Instruction classification, Instruction format, How to write , Assemble and Execute a simple program, Overview of the 8085/8080A Instruction set.

Introduction to 8085/8080A Instructions: Data transfer (copy) Operations, Arithmetic Operations, Logic Operations, Branch Operations, writing Assembly language Programs.

Programming techniques with Additional Instructions: Programming Techniques: looping, Counting and Indexing, Additional Data Transfer and 16-bit Arithmetic instructions, Arithmetic Operations related to Memory, Logic Operations: Rotate.

Counters and Time Delays: Counters and Time Delays, Illustrative Program: Hexadecimal Counter.

Stack and subroutines: Stack, Subroutine, Conditional Call and Return Instructions.

Code conversion, BCD Arithmetic, and 16-bit Data Operations: BCD-to-Binary conversion, Binary-to-BCD conversion, BCD addition, BCD Subtraction, Multiplication.

INTERFACING PERIPHERALS (I/Os) AND APPLICATIONS

Interrupts: The 8085/8080A Interrupt, Additional 8085 Interrupts

THE INTEL x86 FAMILY – The Intel x86 family Architecture: Introduction, The Register set, Data Formats, Addressing Modes, Instruction Set and Assembly Directives, Interrupt, segmentation, Paging, Real and Virtual Mode Execution, Protection Mechanism, Task Management, Concluding comment.

The Pentium

Reference Books:

- a. Ramesh S. Gaonkar, "Microprocessor Architecture, programming, and Applications", 2nd Edition, New age International.

Daniel Tabak, "Advanced Microprocessors", 2nd Edition, McGraw-Hill.

DATA STRUCTURE LAB – USING C++

Write C ++programs for the following:

1. Write a menu driven program to implement linear and binary search also find the location of its first occurrence
2. Write a menu driven program to sort the array in ascending/descending order using a) Quick sort b) Merge sort
3. Write a menu driven program to create a linked list and to perform insert and delete operations
4. Write a program to add two polynomials using a linked list
5. Write a menu driven program to perform insert and delete operations in a circular linked list
6. Write a menu driven program to perform operations on a stack (linked list implementation)
7. Write a menu driven recursive program to a) find factorial of a given number b) generate first N terms of a fibonacci sequence c) GCD of three numbers
8. Write a program to solve the problem of towers of hanoi with 3 pegs and N discs
9. Write a menu driven program to perform operations on a circular queue (linked list implementation)
10. Write a menu driven program to a) find the length of a string b) concatenate two strings c) to extract a substring from a given string d) finding and replacing a string by another string in a text (Use pointers and user-defined functions)
11. Write a program to convert the given infix expression into its postfix form
12. Write a program to evaluate the postfix expression with a set of values
13. Write a menu driven program to a create binary tree and to perform insert and delete operations
14. Write a menu driven program to create a binary search tree and to perform inorder, preorder and postorder traversals
15. Write a program to sort N elements in ascending order using heap sort
16. Write a program to obtain the path matrix of the given graph

ASSEMBLY LANGUAGE PROGRAMMING LAB

Write assembly language programs for the following
(The output should be displayed on the address or in the data fields using built-in subroutines)

1. a. Write a program to find the first 10 terms of a fibonacci sequence
b. Write a program to find sum of first 10 terms of odd and even series
2. a. Write a program to interchange N one bytes of data
b. Write a program to check whether the 4th bit of a numbers is zero or one. Display FF if 1 otherwise display 00
3. a. Write a program to add N one byte numbers
b. Write a program to add two digit BCD numbers
4. a. Write a program to check whether a byte belongs to the 2-out-of-5 codes. Display FF if it is a 2-out-of-5 code otherwise 00.
Number is 2-out-of-5 code if the left most three bits are zero and in the remaining five bits there are exactly two 1's
b. Write a program to perform linear search over a set of N numbers. Display FF and its position if found otherwise 00
5. a. Write a program to add two 32-bit binary numbers
b. Write a program to add two 32-bit BCD numbers
6. a. Write a program to subtract a 16-bit number from another 16-bit number
b. Write a program to subtract a 16-bit BCD number from another 16-bit BCD number
7. a. Write a program to multiply two 8-bit numbers
b. Write a program to divide a 16-bit number by an 8-bit number
8. a. Write a program to find the largest and smallest of N numbers.
b. Write a program to display a message "HELLO"
9. Write a program to sort the numbers in ascending and in descending order using bubble sort
10. Write a program to display a rolling message "I MSC"
11. a. Write a program to determine the HCF of two one byte numbers
b. Write a program to display FF and 00 alternatively with 1.5 sec delay
12. a. Write a program to check whether a one byte number is a palindrome or not
b. Write a program to prepare a look-up table for the squares of one-digit BCD numbers
13. a. Write a program to simulate the throw of a dice
b. Write a program to determine the LCM of two one byte numbers
14. Write a program to simulate a BCD counter to count from 0 to 100
15. Write a program to simulate a stopwatch with a provision to stop the watch
16. Write a program to implement block move with and without overlap Conditions.

MCA THIRD SEMESTER
3 MCA1 - THEORY OF COMPUTATION

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is *CE 20 + UE 80 = Total 100

Prerequisite: Basic Mathematics Background

PART I: Strings, Alphabets and Languages (4)

PART II: Deterministic Finite Automation (DFA), Non Deterministic Finite Automation(NFA). Equivalence of NFA and DFA without proof, Automation with ϵ -moves, Moore and Mealy machines, two way automation, Equivalence of one way and two way automata. Example of lexical analyzer, Regular expressions-their equivalence to finite automata. (10)

PART III: Regular sets and their properties, Pumping lemma for regular sets, Decision algorithms, Myhill-Nerode theorem, Minimization automata, Minimization algorithm (10)

PART IV: Grammars and their type, Context free grammars, Derivation trees, Simplification of context free grammars, Normal forms of Chomsky and Greibach (10)

PART V: Push down automata and Context free languages, Equivalence of PDAs and CFLs, Properties of Context free languages, Turing machines (10)

PART VI: Properties if recursive and recursively enumerable languages, Greibach theorem, Recursive function theory (08)

Text Books:

1. John E Hopcroft and Jeffery D Ullmann, "*Introduction to Automata Theory*", Pearson Education.- 2004
2. Gyorgy E Revesz, "*Introduction to Formal Languages*", May 1991

References:

1. Madrioli & Ghezzi: *Theoretical Foundations of Computer Science*- Krieger Publications & Co. - 1993
2. Derick Wood: *Theory of Computation* – John Wiley 1987
3. Daniel Cohen: *Theory of Computation* - Wiley 1996

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3 MCA2 - DESIGN AND ANALYSIS OF ALGORITHMS

Prerequisite: Programming methodology and Data Structures

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

Introduction: Notion of Algorithm, Fundamentals of Algorithmic Problem Solving, Important Problem Types.

(Article 1.1 – 1.3 of Text 1) (06)

Analysis of Algorithm Efficiency: Analysis framework, Asymptotic Notations and Basic Efficiency Classes, mathematical Analysis of No recursive Algorithms, Mathematical Analysis of Recursive Algorithms, Example-Fibonacci Numbers, Empirical Analysis of Algorithms, Algorithm Visualization.

(Article 2.1 – 2.7 of Text 1) (09)

Brute Force: Selection Sort and Bubble Sort, Sequential Search and Brute-Force String matching, Closest-Pair and Convex-Hull Problems by Brute-Force, Exhaustive Search.

(Article 3.1 – 3.4 of Text 1) (06)

Divide and Conquer: Merge Sort, Quick Sort, Binary Search, Binary Tree Traversals, Strassen's Matrix Multiplication, Closest-Pair and Convex-Hull Problems.

(Article 4.1 – 4.6 of Text 1) (06)

Decrease and Conquer: Insertion Sort, Depth-First and Breadth-First Search, Topological Sorting.

(Article 5.1 – 5.3 of Text 1) (05)

Transform and Conquer: Presorting, Horner's Rule and Binary Exponentiation.

(Article 6.1 & 6.5 of Text 1) (02)

Space and Time Tradeoff: Sorting by Counting, Input Enhancement in String Matching

(Article 7.1 – 7.2 of Text 1) (02)

Dynamic Programming: Computing a Binomial Coefficient, Warshall's and Floyd's Algorithms, Optimal Binary Search Trees, Knapsack Problem and Memory Functions.

(Article 8.1 – 8.4 of Text 1) (06)

Greedy Technique: Prim's, Kruskal's, and Dijkstra's Algorithm, Huffman Tree

(Article 9.1 – 9.4 of Text 1) (02)

Limitations of Algorithm Power: Lower-Bound Arguments, Decision Trees, P, NP, and NP-complete Problems.

(Article 10.1 – 10.3 of Text 1) (02)

Backtracking: 4-Queen, 8-Queen, n-Queens, Hamiltonian Circuit, and Sum of Subset problem.

(Article of Text 2; Article 11.1 of Text 1)

(02)

Branch and Bound: Assignment, Knapsack, and Traveling Salesman Problem.

(Article 11.2 of Text 1)

(02)

Approximation Algorithms for NP-hard Problems: Traveling Salesman, and Knapsack Problem.

(Article 11.3 of Text 1)

(02)

Text Books:

1. Anany Levitin, “*Introduction to The Design & Analysis of Algorithms*”. Pearson Education, 2003

(This book also has useful information in APPENDIX A & APPENDIX B)

Reference Books :

1. Aho, Hopcraft and Ullman :The Design and Analysis of Computer Algorithms, Pearson Education.-2000
2. Algorithm Design by Michael T Goodrich & Roberto Tamassia, John Wiley & Sons.-2002

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3MCA3 - SOFTWARE ENGINEERING

Prerequisite: Nil

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

Introduction :

Evolution of software, Characteristics of software, Software applications, Components of software, Software myths, Software problems, Software reliability, Software reuse, Software engineering, Components and Software engineering models- Waterfall, Prototyping, Spiral and 4GT. (09)

Metrics and Estimation :

Necessity of Metrics, Size oriented and Function point metrics, Software resources, Objectives of Estimation, Empirical estimation models, COCOMO, Automated tools for estimation. (08)

Project Planning and Management :

Components of Software project plan – staffing, personnel plans, scheduling and monitoring plans, Management activities- directing, communicating, coordinating and controlling, Software acquisition, Re-engineering and Organizational planning. (09)

Software Requirements Specification :

Modelling the system, System specification document, Importance of Software Requirements, SRS activities, Data flow diagrams, Characteristics and Components of SRS, Requirement reviews. (06)

Software Design :

Fundamental Characteristics of good design, Coupling and Cohesion, Design documentation, Function oriented design, Object oriented design and Real time systems design, User interface design. (08)

Software Testing and SQA :

Testing process, Test plans, Levels of Testing, Methods of Testing – Black box and White box testing, Metrics for software quality, Formal approaches to SQA, Clean Room Process. (08)

CASE and SCM :

CASE classification, Integrated CASE, The CASE life cycle, CASE workbenches and Software engineering environments and activities of Software Configuration Management. **(04)**

Text Books :

1. Roger S Pressman :Software Engineering, 4th edition ,TMH Publications - 2005
2. Ian Sommerville :Software Engineering , 7^h edition, Pearson Education - 2004

Reference Books :

1. Pankaj Jalote, Narosa:An Integrated Approach To Software Engineering Pub 1995
2. Carlo Ghezzi, Mehdi Jazeryeri and Dino Mandrioli: Fundamentals Of Software Eng., Pearson/PHI – 2002.

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3MCA4 COMPUTER NETWORKS

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

FOUNDATION: Building a network-Motivation, Requirements, Network Architecture, standardization, OSI model, and Example networks: Public Arpanet, SNA. **(06)**

PHYSICAL LAYER: transmission on media – twisted pair, base band and broad band coaxial cable, fibre-optic, satellites, analog transmission, digital transmission, transmission and switching, ISDN services and architecture. **(06)**

MAC SUBLAYER: Static and dynamic channel allocation, ALHOA protocols, LAN protocols, IEEE standards for LANs, fibre-optic networks, satellite networks, MAC sublayer in Public networks. **(06)**

DATA LINK LAYER: Design Issues, Error detection and correction, sliding window protocols, Datalink Layer in Public networks. **(06)**

NETWORK LAYER: Design Issues, Routing Algorithms, Congestion control algorithms, Internetworking, Network layer in Public networks. **(06)**

TRANSPORT LAYER: Design Issues, connection management, X.20, transport layer in public networks. **(06)**

SESSION LAYER: Design Issues, Remote procedure calls, sessions layer in public networks. **(06)**

PRESENTATION LAYER: Design Issues, Data compression techniques, cryptography, presentation layer in Public networks. **(06)**

APPLICATION LAYER: Design Issues, FTP and management, e-mail, virtual terminals, other applications and application layer in public networks. **(04)**

Text Book:

1. Andrew S Tanenbaum, “*COMPUTER NETWORKS*”, Fourth Edn., Pearson Education - 2003
2. Larry L.Peterson & Brme S.Dave, “*COMPUTER NETWORKS-A System approach*”. Morgan Kaufmann Publishers, 1996.

References:

1. COMPUTER NETWORKS by James Martin, Prentice Hall, 6th Edition - 2004
2. COMPUTER NETWORKS by Vijay Ahuza, McGraw Hill.-2003

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UE – University Examination.

Elective I

3MCA 5 (A) COMPUTER BASED OPTIMIZATION TECHNIQUES

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

Definition of OR, Model in OR, principle of modelling, Introduction to Linear and non-linear programming and Formulation. Linear Programming : Characteristics, Assumptions and Applications, Graphical Solution of two variables LPP, LP in standard form, Solution of LP by Simplex and revised simplex methods, cases of LP. (15)

Duality and Dual Simplex method, Sensitivity analysis of LPP, Special types of LPP's :- Transportation, Assignment, Traveling-Salesman problem. (15)

Network Models : Definition, Minimum Spanning Tree algorithm, Shortest Route problem, Maximum flow problem. CPM & PERT : Network representation, Critical Path Computations, Linear Programming formulation of CPM, PERT Networks. (10)

Queuing System : Elements of Queuing model, Pure birth and death models, Generalized Poission Queuing model, specialized poission. Queues : Steady-state Measure of performance, single sever models, Multiple server models, Matching serving model. (12)

Text Book

1. H.A. Taha, Operations Research, PHI, New Delhi. - 1996
2. A Ravindram, Phillips and Solberg. Operation Research, John Wiley and Sons. - 1987

Reference Books

1. **Simulation Based Optimization** by Abhijit Gosavi, Kluwer Academic Publishers – 2003.

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3MCA 5 (B) Computer Graphics and Visualization

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

1. Graphics Systems and Models.

Applications of Computer Graphics, Display of Information, Design, Simulation, User Interfaces, A Graphics System, Pixels and the Frame Buffer, Output Devices, Input Devices, Images: Physical and Synthetic Objects and Viewers, Light and Images, Ray Tracing, The Human Visual System, The Pinhole Camera, The Synthetic-Camera Model, The Programmer's Interface, Application Programmer's Interfaces, The Pen-Plotter Model, Three-dimensional APIs, A Sequence of Images, The Modeling/Rendering Paradigm, Graphics Architectures, Display Processors, Pipeline Architectures, Transformations, Clipping, Projection, Rasterization, Performance Characteristics. (10)

2. Graphics Programming.

The Sierpinski, Gasket, Programming Two-dimensional Applications, Coordinate Systems, The OpenGL API, Graphics Functions, The Graphics Pipeline and State Machines, The OpenGL Interface, Primitives and Attributes, Polygon Basics, Polygon Types in OpenGL, Drawing a Sphere Text, Curved Objects, Attributes, Color, RGB Color, Indexed Color, Setting of Color Attributes, Viewing, Two-Dimensional Viewing, The Orthographic View, Matrix Modes. Control Functions, Interaction with the Window System, Aspect Ratio and View ports, The main, display, and myinit Functions, Program Structure. The Gasket Program. Polygons and Recursion. The Three-Dimensional Gasket. Use of Three-Dimensional Points. Use of Polygons in Three Dimensions. Hidden-Surface Removal. (10)

3. Input and Interaction.

Interaction. Input Devices. Physical Input Devices. Logical Devices. Measure and Trigger. Input Modes. Clients and Servers. Display Lists. Definition and Execution of Display Lists. Text and Display Lists. Fonts in GLUT. Programming Event-Driven Input. Using the Pointing Device. Window Events. Keyboard Events. The Display and Idle Callbacks. Window Management. Menus. Picking. Picking and Selection Mode. A Simple Paint Program. Animating Interactive Programs. The Rotating Square. Double Buffering. Other Buffering Problems. Design of Interactive Programs. Toolkits, Widgets, and the Frame Buffer. Logic Operations. Drawing Erasable Lines. XOR and Color. Cursors and Overlay Planes. (10)

4. Geometric Objects and Transformations.

Scalars, Points, and Vectors. The Geometric View. Coordinate-free Geometry. The Mathematical View: Vector and Affine Spaces. The Computer-Science View. Geometric ADTs. Lines. Affine Sums. Convexity. Dot and Cross Products. Planes. Three-Dimensional Primitives. Coordinate Systems and Frames. Representations and N-tuples. Changes of Coordinate Systems. Example of Change of Representation. Homogeneous Coordinates. Example of Change in Frames. Working with Representations. Frames and ADTs. Frames in OpenGL. Modeling a Colored Cube. Modeling of a Cube. Inward- and Outward-Pointing Faces. Data Structures for Object Representation. The Color Cube. Bilinear Interpolation. Vertex Arrays. Affine Transformations. Rotation, Translation, and Scaling. Translation. Rotation. Scaling. Transformations in

Homogeneous Coordinates. Translation. Scaling. Rotation. Shear. Concatenation of Transformations. Rotation About a Fixed Point. General Rotation. The Instance Transformation. Rotation About an Arbitrary Axis. OpenGL Transformation Matrices. The Current Transformation Matrix. Rotation, Translation, and Scaling. Rotation About a Fixed Point in OpenGL. Order of Transformations. Spinning of the Cube. Loading, Pushing, and Popping Matrices. Interfaces to Three-Dimensional Applications. Using Areas of the Screen. A Virtual Trackball. Smooth Rotations. Incremental Rotation. (12)

5. Viewing.

Classical and Computer Viewing, Classical Viewing, Orthographic Projections, Axonometric Projections, Oblique Projections, Perspective Viewing, Viewing with a Computer, Positioning of the Camera, Positioning of the Camera Frame, Two Viewing APIs, The Look-At Function, Other Viewing APIs, Simple Projections, Perspective Projections, Orthogonal Projections, Projections in OpenGL, Perspective in OpenGL, Parallel Viewing in OpenGL, Hidden-Surface Removal, Culling, Walking Through a Scene, Parallel-Projection Matrices, Projection Normalization, Orthogonal-Projection Matrices, Oblique Projections, Perspective-Projection Matrices, Perspective Normalization, OpenGL Perspective Transformations, Projections and Shadows. (10)

Text Book

Interactive Computer Graphics: A Top-Down Approach Using OpenGL, 3rd Edition
By Edward Angel. Published by Pearson Education, 2002

Reference Books

- 1) Computer Graphics with OpenGL(International Edition)
3rd Edition Donald Hearn, M. Baker 131202383 (Hardback) Oct 2003, 880 pages
Pearson Education.
- 2) Computer Graphics Using Open GL, 2/E
Francis S. Hill, Jr.
ISBN:0-02-354856-8
Publisher:PrenticeHall-2003

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3MCA5 (C) ACCOUNTING AND FINANCIAL MANGEMENT

- Note:**
1. The total number of hours allotted for each subject in a semester is 52 hours.
 2. The number of theory hours per week is 4 hours.
 3. The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

SECTION A

Accounting: Principles, concepts and conventions, double entry system of accounting, Introduction to basic books of accounts of sole proprietary concern, closing of books of accounts and preparation of trial balance.

Final Accounts: Trading, Profit and Loss accounts and Balance Sheet of sole proprietary concern (Without adjustments). (15)

SECTION B

Financial Management: Meaning, scope and role, A brief study of functional areas of financial management. Introduction to Various FM Tools: Ratio Analysis, Fund flow statement & Cash flow statement. Introduction to Cost Accounting : Nature, Importance & Basic Principles. Brief Introduction to methods of Costing & Elements of Cost, Unit Costing. (15)

SECTION C

Computerised Accounting: Meaning & advantages, limitations of computerised accounting, manual accounting verses computerised accounting, Source documents, Balancing Accounts, Trial Balance & Final A/Cs in Computerised. Accounting. Modules of Computerised Accounting Systems. Developing computerised accounting systems, control & Audit in computerised accounting. (15)

SECTION D

Business Systems, Production Control System, Inventory System, Payroll System (07)

Text Book :

1. Ramachandran, "Financial Accounting for Managers", Tata McGraw Hill - 2005
2. I.M. Pandey, : Financial Management, Vikas Publications, 2003
3. P.H. Bassett, "Computerised Accounting", BPB. 2003
4. Neeraj Sharma "Computerized Accounting & Business Systems", Kalyani Publishers. 2004

References:

1. Jain and Narang, "Principles of Accounting".-2003
2. P.V. Kulkarni, "Financial Management", Himalaya Publishing House., 2003
3. Sharma, Gupta & Bhalla, "Management Accounting". 2004
4. Jain and Narang, "Cost Accounting",. 2004
5. Katyal, "Cost Accounting"., 2003

6. Charlotte Eudy McConn, "Business Computer Systems: Design, Programming & Maintenance, (PHI), 2004.
7. Kellock. J : Elements of Accounting, Heinemann., 2003
8. Rockely.L.E : Finance for the Non-accountant, 2nd Ed., Basic Books., 2003
9. Levy and sarnat : Principles of Financial Management, Prentice –Hall International. 2004
10. Armolel : Financial Accounting, PHI (Paper back editor), 2003
11. Horngren and Sundem : Introduction to Finacial Accounting, PHI (Paper back Editor)., 2004
12. Var Home, James C. : Financial Management & Policyt Prentice Inc., 2003

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3MCA6 Software Engineering Mini Project

The students are supposed to develop a mini – project for above mentioned lab. The students can do the project in a group (team) consisting of not more than 4 students.

The entire project to be submitted by each team should be done with some DBMS backed like Oracle and front end tools like Visual Basic, Developer 2002 etc.

3MCA7 Operating System Mini Project

1. CPU SCHEDULING
2. DISK SCHEDULING
3. TIME SHARING SYSTEMS
4. PAGING
5. DEMAND PAGING
6. PAGE REPLACEMENT ALGORITHMS
7. VIRTUAL MEMORY
8. SPOOLING
9. FILE ALLOCATION METHODS
10. DEADLOCKS
11. PRINTER DEVICE DRIVER
12. PROTECTION & SECURITY (ENCRYPTION AND DECRYPTION)

3MCA8 Soft Skills – Lab

Activities to be conducted to cover the following:

Verbal Communication

The Communication Process, Modes of Communication, Barriers/Filters to effective communication, Stages in effective communication, Levels in Communication, Interpersonal Communication, Effective listening, Barriers to effective listening, Assertive communication, Communication at the workplace, Telephone, SWOT Analysis and action points.
Group Discussion

Written Communication

Email, Technical Documents

Corporate Etiquette

First Impression, Dress Code, Introduction, Posture/Eye Contact, Manners, Dining Etiquette, Accountability, Commitment, Initiative, Customer Interaction, Telephone etiquette.

Text Book

1. Technical Communications – Principles and Practice, Meenakshi Raman & Sangeeta Sharma, Oxford University Press, 2000

Reference Books:

1. Powerful Communication Skills: How to communicate with Confidence – by Colleen McKenna , 2000
2. Effective Listening Skills – by Art James, Dennis Kratz, McGraw Hill, 1995
3. Listening: A Self-Teaching Guide – by Madelyn Burley-Allen, Wiley Publishers, 1995
4. The Lost Art of Listening: How Learning to Listen Can Improve Relationships – Machael P. Nichols, Guilford Publication, 1995
5. Written Communication – Gail Stewart., Black Birch Publications, 2004
6. Writing Effective E-Mail – Creating Success by Nancy & Tom Flynn, Crisp 2004
7. The Elements of E-Mail Style: Communicate effectively Via Electronic Mail by David Angell, Brent Heslop, 1994
8. The Definitive Book of Body Language: The Secret Meaning Behind People's Gestures by Allan Pease, Barbara Pease, Orion Publication Group, 2004
9. The Etiquette Advantage in Business: Personal Skills for Professional Success (Hardcover) by Peggy Post, Peter Post, Harper Collins Publishers 1999
10. Gestures (The Do's and Taboos of Body Language Around the World) by Roger E. Axtell, Mike Fornwald., John Wiley & Sons Inc., 1998

FOURTH SEMESTER

4MCA1 Internet Technologies

- Note:**
1. The total number of hours allotted for each subject in a semester is 52 hours.
 2. The number of theory hours per week is 4 hours.
 3. The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

Review of Computer Networks : The Internet, Domains and Addresses, Options for Connecting, Software, Modem etc. (15)

The Internet Toolkit: Electronic email, ftp, telnet, finger etc. WWW, HTTP (15)

Providing resources: HTML, Javascript, CGI, Pearl, Introduction to JAVA, DHTML, XML etc.

HTTP Server Programming (HTML forms and CGI), HTTP, Servlet Programming (Understanding JAVA Servlets and JSP) (22)

Text Books:

1. J. Niederst: Web Design in a Nutshell, O'Reilly - Associates, 1999
2. Marty Hall: The Core Web Programming, Prentice-Hall, 2003
3. Gralla, P. (2004). How the Internet works. (7th ed.). Indianapolis: Que.
4. H.M. Deitel, P.J. Deitel, and T.R. Nieto, Internet and World Wide Web, How to Program, Cambridge Prentice Hall, 2000.

Reference Books:

1. Achyut S. Godbole , "Web Technologies", Tata McGraw Hill, 2004

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4MCA2 OBJECT ORIENTED ANALYSIS AND DESIGN USING UML

Prerequisite: Basic knowledge of Object Oriented Programming.

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

Complexity: The Inherent Complexity of Software, the Structure of Complex Systems, Bringing Order to Chaos, On Designing Complex Systems.

(Article 1.1 to 1.4 of Text 1) (06)

The Object Model: The Evolution of the Object Model, Elements of the Object Model, Applying the Object Model.

(Article 2.1 to 2.3 of Text 1) (06)

Classes and Objects: The Nature of an Object, Relationships Among Objects, The Nature of a Class, Relationships Among Classes, The Interplay of Classes and Objects, Building Quality Classes and Objects.

(Article 3.1 to 3.6 of Text 1)

(06)

Classification: Importance of Proper Classification, Identifying Classes and Objects, Key Abstraction and Mechanisms.

(Article 4.1 to 4.3 of Text 1)

(06)

Notation: Elements of the Notation, Class Diagrams, State Transition Diagrams, Object Diagrams, Interaction Diagrams, Module Diagrams, Process Diagrams, Applying the Notations.

(Article 5.1 to 5.8 of Text 1)

(06)

The Process: Principles, the Micro Development Process, the Macro Development Process.

(Article 61 to 63 of Text 1)

(06)

Pragmatics: Management and Planning, Staffing, Release Management, Reuse, Quality Assurance and Metrics, Documentation, Tools, the Benefits and Risks of Object-Oriented Development.

(Article 71 to 7.8 Text 1)

(06)

Applications: Data Acquisition: Weather Monitoring Station; Client/Server Computing: Inventory Tracking.

(Article 8.1 to 8.4 & 10.1 to 10.4 of Text 1)

(05)

Object Oriented Programming Languages: Smalltalk, Object Pascal, C++, Ada.

(Article APPENIX A of Text 1)

(05)

Text Book:

(1) Grady Booch, “*Object-Oriented Analysis and Design*”. Pearson Education, 2nd Edition, 2003

Reference Books:

(1) *Object Oriented Systems Analysis and Design Using UML*, Simon Bennett, Mcrobb & Rayfarmar, Tata McGraw Hill. 2nd Edition. 2003

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4MCA 3 DATA WAREHOUSING AND BUSINESS INTELLIGENCE

Prerequisite: Database Management System

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

1. Introduction to data warehousing – The need for data warehousing (1.2), Operational and informational Data stores(1.5), Data warehouse definition and characteristics (1.6), Data warehouse architecture (1.7)
4 hrs
2. Data warehousing component - Data warehouse Database (6.2), Sourcing, Acquisition, Cleanup and transformation tools (6.3), Metadata (6.4), Access tools (6.5), Data marts(6.6), Data warehousing administration and management (6.7), Information delivery system.
6 hrs
3. Online analytical processing(OLAP) - Need for OLAP (13.1), Multidimensional data model (13.2), OLAP guidelines(13.3), Multidimensional vrs. Multirelational (OLAP (13.4), Categorization of OLAP tools (13.5), OLAP tools internet (13.6)
8 hrs
4. Statistics- Data counting and probability (15.1), Hypothesis testing (15.2), Contingency Tables, The chi square test, and non casual relationship.
8 hrs
5. Introduction to data mining – The motivation (17.2), Learning from past mistake (17.3), Data mining (17.4), Measuring data mining effectiveness(17.5), Embedded data mining into business process (17.6), What is decision tree (18.1), Business score card (18.2), Where to use decision tree (18.3), The general idea (18.4), How the decision tree works (18.5).
Case study: Prediction wireless communication churn with CART.
10 hrs
6. Nearest neighbor and clustering - Where to use clustering and nearest neighbor prediction (20.2), How clustering and nearest neighbor prediction works (20.4)
Case study: Image recognition for human handwriting
10 hrs
7. Genetic Algorithm - What are Genetic Algorithms (21.1), Where to use Genetic Algorithm? (21.2), The general idea (21.3), How the Genetic algorithm works (21.4)
Case study: Optimizing predictive customer segment
14 hrs

Text Books

1. “*Principles and Implementation of Data Ware housing*” by Rajeev Parida
Fire Wall Media, Lakshmi Publications. 2006
2. “*Building the Data Warehouse*”, W.H.Inmon, John Wiley & Sons.2002

3. Data warehousing, Data mining and OLAP by Alex Berson & Stephon J. Smith, Tata McGraw Hill.2003
4. Data Warehousing in the Real World – A Practical Guide for Building Decision Support Systems, Sam Anahory & Dennis Murray, Pearson Education.2003

Reference Books

- 1.Data Mining – Introductory and Advanced Topics, Margaret H. Dunham, Pearson Education., Prentice Hall 2003.
2. Introduction to Data Mining, Pang-Ning Tan, Michael Steinbach, & Vipin Kumar, Pearson Addison Wesley, 2006.
3. Managing the Data Warehouse”, W.H.Inmon, C.L.Gassey, John Wiley & Sons. 2004
5. “Advances in knowledge discovery & Data mining”, Fayyad, Usama M. et. al., MIT Press 2003.

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4MCA4 Software Architecture

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

General Information: This course focuses on introduction to Software Architecture, with special emphasis on COM and its implementation, using VB

Prerequisites: Basic understanding of OO concepts.

System requirements: A Pentium Microprocessor, A hard disk with a minimum of 52 megabytes free space, VGA or higher resolution screen, 64 MB of RAM, A suitable pointing device

Software Architecture, Pipe and Filters, Layered, MVC, Broker (COM), COM Overview, Building COM Components, Code components (Active X EXE and DLL), Building Class Templates, Error handling inside the Class, Threading Models, Controls, Deciding and implementing UI for the control, Deciding and implementing functionality of the control, Persisting data associated with the control, Windowless control, Safety and Licensing issues.

(20)

Building Internet applications using VB, IIS Template, DHTML Template, DCOM, DCOM Overview, The Dcomcnfg Tool, COM+, COM+ Overview, COM+ Components using VB. **(20)**

Introduction to CORBA. Overview level comparison between CORBA and COM. **(12)**

Reference Books:

1. Software Architecture by Mary Shaw & David Garlan, Prentice Hall 2003.
2. Professional VB Distributed Objects, Wrox Publications 2003.
3. Beginning Components for ASP, Wrox Publications 2004.
4. DCOM: Microsoft DCOM by Frank E Redmon, Wrox Publications 2005.

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UE – University Examination.

ELECTIVE II

4MCA5 (A) COMPLIER DESIGN

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

Introduction to compiler- Compiler and Translators-Phases of Compilation-One pass compiler, Lexical Analysis-Role of Lexical Analyzer-Regular expressions-Finite Automata-Design of lexical Analyzer- Context free grammars-Parse trees. (10)

Parsers-Shift reduce parsing-Operator precedence parsing-Top down parsing Predictive parsers-Simple precedence parsers-LR parsers-SLR parser tables-LALR parsing tables-Ambiguous grammars. (07)

Syntax directed translation-Construction of syntax trees-Evaluation of S attributed and L attributed definitions-Top down Translation-Recursive evaluators, Type checking-Simple type checker-Type conversions- Overloading of functions and operators-Polymorphic functions, Run time environment –Source language issues-Storage organization-Storage Allocation-symbol tables-Dynamic storage allocation techniques. (10)

Intermediate code generation-Languages-Declarations-Assignment statements-Boolean expression-Case statements-Backpatching-Procedure Calls, code optimization-Sources of optimization-Basic blocks-Loops-Global Data Flow analysis-Solution of data flow equations- Code improving transformations-Dealing with aliases-Data Flow analysis of flow graphs-Symbolic debugging of optimized code, Code generations-Issues in the design of code generator- Simple code generator Register allocation and assignment-DAG representations-PEEP hole optimization-generation of code from DAG's-Code generation algorithm. (15)

Approaches to compiler development-Compiler environment- Testing and Maintenance Compiler for Pascal-Compiler for C. (10)

Text Book :

1. A.V.Aho Ravi Sethi and J.D Ullman : “ Compiler-Principles, Techniques and Tools” Pearson Education 2004.

Reference:

1. A.V.Aho Ravi Sethi and J.D Ullman : “ The Principles of Compiler Design”, Narosa Publishing House, 1987
2. D.M.Dhamdhere : “Compiler Construction, Principles and Practice”, McMillian India Ltd., 1983

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4MCA5 (B) Network Programming

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

Introduction to Networking and Internet, Communication Protocols, Berkeley sockets, Socket Implementation, Time and Date Routines, Ping, System V Transport Layer Interface, Network Security, Trivial File Transfer Protocol, Remote Procedure Calls, Remote Login, Router and switch configurations, Internet operating systems.

Internet work setup, wireless internetworking, Network protocol analyzers; traffic generation.

Text Books:

1. Computer Networking: A Top-Down Approach Featuring the Internet, J. F. Kurose and K. W. Ross, Pearson Education, 2nd edition, 2002

Reference Books:

1. Unix Network Programming, W. Richard Stevens, Prentice Hall 1990
2. Internetworking with TCP/IP, Volume3, Douglas Comer, Prentice Hall 1996
3. Internetworking with TCP/IP, Volume1, Douglas Comer, Prentice Hall 5th Edition 2006
4. The Art of Distributed Applications, John R. Corbin, Springer-Verlag, 1995
5. The Design and Implementation of the 4.3 BSD UNIX Operating System, March 1st 1991. Leffler, et. al., Addison Wesley
6. TCP/IP Sockets in C: Practical Guide for Programmers (The Practical Guides Series), M. J. Donahoo and K. L. Calvert, Morgan Kaufmann Publishers, January 2000
7. TCP/IP Sockets in Java: Practical Guide for Programmers (The Practical Guides Series), K. L. Calvert and M. J. Donahoo, Morgan Kaufmann Publishers, October 2001

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4MCA5 (C) MULTIMEDIA COMMUNICATIONS

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

1. Introduction: What are multi media, multimedia application, Goal and objectives, Multimedia building blocks, multimedia and internet. **(06)**
2. Multimedia Configuration: Multimedia PC workstation components, multimedia platform, multimedia development tool, authoring tool, Interactivity, High end multimedia architectures. MULTIMEDIA OPERATING SYSTEM File system (File format: TIEF, BMP, PCX, GIF etc.) Process management, multimedia communication system, multimedia database management system. **(10)**
3. Multimedia Audio: Basic sound concepts, audio capture, music, speech sound processor, sound recovery technique, VOC4WAV file formats for sound. **(04)**
4. Multimedia graphics: 2D/3D animation fundamentals, color modules DIGITAL IMAGING: still and moving images; video capture animation video, Processing, video recovery techniques, AVO, AVI file formats, NTSC, PAL, SECAM, HDTV, system video/audio conferencing techniques and standards, video streaming, motion of synchronization. **(06)**
5. Image Compression techniques: LZW, DCT run length coding, JPEG, MPEG, standard hypertext MHEG, Hypertext and Hypermedia, document architecture ODA, MHEG. **(08)**
6. Augmented and virtual reality and multimedia: Concept, VR devices: hand Gloves, head mounted tracking system, V R Chair, CCD, VCR ,3D, sound system, Head Mounted Displays and rendering software setup, Virtual objects, VRML. **(08)**
7. Multimedia devices: Mass storage systems for multimedia requirements, Magnetic devices, Optical devices, CDRom, DVD. Scanners: Types and specifications. **(04)**
8. Windows support to Multimedia: Multimedia Databases (in Oracle), multimedia function calls, windows support for sound, animation, movies, music and midi controls. **(04)**
9. Case study: Multimedia and UNIX, Virtual Coffee house application. **(02)**

Text Books :

1. Ralf Steinmetz & Klara Nahr Stedt, PHI Publications:
Multimedia - Computing, Communications and Applications. 2003.

References

1. Judith Jefcoate, Multimedia in Practice: Technology and Application PHI 1998.
2. Durano R Begault, Virtual Reality and Multimedia, AP Professionals. 2003
3. Micheal J Young, Windows multimedia and animation with C++ programming for Win95, AP Professional. 2004
4. Kris Jama, Phil Schmauder, nelson Yee, VRML Programmer's Library, Galgotia 2003
5. Joe Gradicki, Virtual reality Construction Kit, Jhon Wile & Sons Inc. May 1994
6. Aitken Jarol, Visual C++ Multimedia Adventure set, Coriolis Group books May 15, 1995

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4MCA6 ENTERPRISE COMPUTING MINI LAB AND ELECTIVE II MINI PROJECT

The students are supposed to develop a mini – project for above mentioned lab. The students can do the project in a group (team) consisting of not more than 4 students. A project report must be submitted by each team.

4MCA7 JAVA PROGRAMMING LAB

1. Write a program to check whether two strings are equal or not.
2. Write a program to display reverse string
3. Write a program to find the sum of digits of a given number.
4. Write a program to display a multiplication table.
5. Write a program to display all prime numbers between 1 to 1000
6. Write a program to insert element in existing array
7. Write a program to sort existing array.
8. Write a program to create object for TreeSet and Stack and use all methods.
9. Write a program to check all math class functions.
10. Write a program to execute any Windows95 application (Like notepad calculator etc).
11. Write a program to find out total memory, free memory and free memory after executing garbage Collector(gc()).
12. Write a program to copy a file to another file using java.io package classes. Get the file names at run time and if the target file is existed then ask confirmation to overwrite and take necessary actions.
13. Write a program to get file name at runtime and display number of lines and words in that file.
14. Write a program to list files in the current working directory depending upon a given pattern.
15. Create a text field that allows only numeric value and in specified length.
16. Create a Frame with 2 labels, at runtime display x and y coordinate of mouse pointer in the labels.
17. Create a Frame and checkbox group with five checkboxes, with label as Red, Green, Blue, Yellow, and White. At runtime change the background color of the frame with appropriate selection of the checkbox.
18. Create a Frame, Choice and Label, Add five items in the choice. At runtime display the selected items of choice in the label.
19. Create a Frame with three Scrolls, change the background color of the frame using RGB function with values of Scrolls (Use color Object to set the background of the frame).
20. Create a Message Dialog box like Windows95 Message Box. At runtime pass message for that Message Box.

4MCA8 ELECTIVE II MINI PROJECT

The students are supposed to develop a mini – project for above mentioned lab. The students can do the project in a group (team) consisting of not more than 4 students. A project report must be submitted by each team.

FIFTH SEMESTER

5MCA1 Elements of Artificial Intelligence

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

1. Introduction to Artificial Intelligence: Definition. A.I Applications, A I representation. Properties of internal Representation, Heuristic search techniques. Best first search, mean and end analysis, A* and AO* Algorithm. **(06)**

2. Game playing: Minimize search procedure, Alpha beta cutoffs, waiting for Quiscence, Secondary search. **(06)**

3. Knowledge representation using predicate logic: predicate calculus, Predicate and arguments, ISA hierarchy, frame notation, resolution, Natural deduction. **(04)**

4 Knowledge representation using non monotonic logic: TMS (Truth maintenance system), statistical and probabilistic reasoning, fuzzy logic, structure knowledge representation, semantic net, Frames, Script, Conceptual dependency. **(06)**

5. Planning: block world, strips, Implementation using goal stack, Non linear planning with goal stacks, Hierarchical planning, list commitment strategy. **(04)**

6. Perception: Action, Robot Architecture, Vision, Texture and images, representing and recognizing scenes, waltz algorithm, Constraint determination, Trihedral and non trihedral figures labeling. **(08)**

7. Learning: Learning as induction matching algorithms. Failure driver learning, learning in general problem solving concept learning. **(04)**

8. Neural Networks: Introduction to neural networks and perception-qualitative Analysis only, neural net architecture and applications. **(04)**

9. Natural language processing and understanding and pragmatic, syntactic, semantic, analysis, RTN, ATN, understanding sentences. **(06)**

10. Expert system: Utilization and functionality, architecture of expert system, knowledge representation, two case studies on expert systems. **(04)**

Text Book :

1. E. Charnaik and D. McDermott," Introduction to artificial Intelligence", Pearson Eductaion, April 1992

2. Dan W. Patterson, "Introduction to Artificial Intelligence and Expert Systems", PHI.2003

References:

1. E. Rich and K. Knight, " Artificial Intelligence", Tata McGraw Hill.2003
2. Nils J. Nilson, "Principles of Artificial Intelligence", Narosa Publishing Co. 2002
3. W.F. Clifisin and C.S. Mellish, "Programming in PROLOG", Narosa Publishing Co.2003
4. Sanjiva Nath, "Turbo PROLOG", Galgotia Publications Pvt. Ltd. 2003
5. M. Chandwick and J.A. Hannah, "Expert Systems for Personal Computers", Galgotia Publications Pvt. Ltd. 2004

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5MCA2 E-Commerce

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

1. Electronic Commerce Framework, Electronic Commerce and media Convergence, The Anatomy of E-commerce Applications.

Architectural Framework for Electronic Commerce, World Wide Web as the Architecture, Web Background : Hypertext publishing, Security and the Web. (06)

2. Client-Server Network Security, Emerging Client-Server Security Threats, Firewalls and Network Security,

Data and Message Security, Digital signatures, Encrypted Documents and Electronic Mail : PGP and PEM. (06)

Legal, Ethical and other public policy issues related to Electronic Commerce : Protecting privacy, protecting Intellectual property, Copyright, trademarks and patents, Taxation and encryption policies. (06)

3. Consumer oriented Electronic commerce : Consumer oriented applications, Mercantile process models, Mercantile models from the Consumer's perspective-Mercantile models from the Merchant perspective. (10)

4. Types of Electronic Payment Systems, Authentication, Digital Token- Based Electronic Payment Systems, Electronic cards and Electronic payment Systems, Credit Card-Based Electronic Payment Systems, Risk and Electronic payment Systems, Designing Electronic Payment Systems. (15)

Electronic Data Interchange, EDI Applications in Business, EDI : Legal, Security and Privacy Issue, EDI and Electronic Commerce. (09)

Text Book

1. Ravi Kalakota, Andrew B. Whinston : Frontiers of Electronic Commerce, Pearson Education. 2003

References:

1. Efraim Turbon, Jae Lee, David King, Chung : Electronic Commerce- A managerial perspective, Prentice-Hall International.4th Edition 2006.
2. Greenstein, Feinnman : Electronic Commerce, Tata McGraw-Hill.2003
3. Jeffrey F. Rayport, Bernard J. Jaworski : e-Commerce, Tata McGraw Hill.2002
4. David Whiteley : e-Commerce, Tata McGraw Hill.
Pete Loshin, Paul A. Murphy : Electronic Commerce, Jaico Publishing House.2004

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5MCA3 Distributed and Parallel Computing

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

I. Fundamentals (15 hours)

Introduction:

Motivation for Parallelism: Parallel Computing, Speed Up, Moore's Law, Grand Challenge Problems, Trends;

Parallel and Distributed Computers: Flynn's Taxonomy, Distributed Memory Multicomputers, Shared Memory Multiprocessors, Networks of Workstations, Cluster and Grid Computing;

Message Passing Computing: Process Creation, Message Passing Routines, Point-to-Point, Collective Communication;

MPI and PVM: MPI Model of Computation, Basic Concepts, Message Passing Routines, Point-to-Point, Collective Communication, Comparison of MPI and PVM;

Performance Measures: Granularity, Speed Up, Efficiency, Cost, Amdahl's Law, Gustafson's Law, Isoefficiency;

Analysis of Parallel Programs: Parallel Computation Models, PRAM, Modeling Communication, Cluster Cost Model;

II. Parallel Programming Techniques (22 hours)

Introduction: Techniques;

Embarassingly Parallel Computations: Low Level Image Processing, Mandelbrot Set, Monte Carlo Methods;

Simple Data Partitioning: Sum of Numbers, Bucket Sort, Numerical Integration, N-Body Problem;

Divide-and-Conquer: Sum of Numbers, Merge Sort, Adaptive Quadrature, Barnes-Hut Algorithm;

Pipelined Computations: Type 1, 2 and 3 Pipelines, Sum of Sequence, Insertion Sort, Prime Number Generation, Back Substitution;

Scheduling and Load Balancing: List Scheduling, Static Load Balancing, Dynamic Load Balancing, Moore's Algorithm;

Synchronous Computations: Data Parallel Programming, Global and Local Synchronization, Solving Linear Equations, Cellular Automata;

Shared Memory Programming: Threads, Compiler Directives, OpenMP;

III. Case Studies: Algorithms and Applications (15 hours)

Introduction: Algorithms and Applications;

Sorting Algorithms: Rank Sort, Compare and Exchange, Bubble Sort, Quicksort, Bitonic Mergesort;

Numerical Algorithms: Matrix Algorithms, Solving Linear Equations, Gaussian Elimination; Jacobi Iteration;

Image Processing: Low Level Image Processing, High Level Image Processing, Fourier Transform;

Text Books :

1. Barry Wilkinson and Michael Allen. Parallel Programming: Techniques and Applications Using Networked Workstations and Parallel Computers (2nd Edition), Prentice Hall PTR (2004), ISBN 0-13-140563-2 (Home Page for Text Book).
2. Michael J. Quinn. Parallel Programming in C with MPI and OpenMP, McGraw Hill (2004), ISBN 0-07-282256-2 (Home Page for Text Book).

Reference Texts:

1. A. Grama, A. Gupta, G. Karypis and V. Kumar. Introduction to Parallel Computing (2nd edition), Addison Wesley (2002), ISBN 0-201-64865-2.
2. H. El-Rewini and T.G. Lewis. Distributed and Parallel Computing, Manning (1997), ISBN 0-13-795592-8.
3. I. Foster. Designing and Building Parallel Programs, Addison Wesley (1995), ISBN 0-201-57594-9.
4. Kai Hwang and Zhiwei Xu. Scalable Parallel Computing, McGraw Hill (1998), ISBN 0-07-031798-4.

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5MCA4 Network and Information Security

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

1. Network Security Fundamentals: Introduction, security Vulnerabilities and Threats, Classification of Security Services. **(05)**
2. Cryptography: Encryption Principles, Conventional Encryption DES, IDEA, Algorithms, CBC, Location of Encryption Devices key Distribution. **(05)**
3. Message Digests and Checksums, Message Authentication, Message Digests, Hash Functions and SHA, CRCs. **(05)**
4. Public Key Systems: RSA, Diffie-Hellman, DSS, Key Management. **(02)**
5. Number Theory: Modular Arithmetic, Euclid Algorithm, Euler Theorem, Chinese Remainder Theorem. **(05)**
6. Confidentiality, Integrity, Non-Repudiation, Mechanisms, Protocol Requirements, Options, Non-Repudiation - Process Non-Repudiation - Delivery. **(05)**
7. Authentication, Password-Based Authentication, Address-Based Authentication, Certificates, Authentication Services. **(05)**
8. Email Security, Threats, PGP, S/MIME. **(02)**
9. Firewalls, Design Principles, Packet Filtering, Access Control, Trusted Systems, Monitoring and Management. **(05)**
10. IP Security: IP Overview, IP security Architecture, Authentication Header, Encapsulating Security Payload, Key Management, Network Management. **(04)**
11. Web Security, Web Security Threats, Web Security Requirements, Secure Socket Layer and Transport Layer Security, Secure Electronic Transactions. **(04)**
12. Intruders: ntrusion Techniques, Intrusion Detection. **(02)**
13. Viruses, Access Control and Management, Access Control Policies, Access Control Mechanisms, Types of Viruses, Anti-virus Techniques **(04)**

Text Book:

1. Network security Essentials: Applications and Standards.
William Stallings. Pearson Education. 1st Edition, 2000
2. Network Security : Kaufman Perlman and Speciner, PHI Publications.2002

Reference:

1. Cryptography and Network Security. William stallings. Pearson Education. 2004.

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ELECTIVE III
5MCA5(A) Simulation and Modeling

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

Introduction: Models, Behaviors, Uses of simulations and motivations. Analytical system simulation techniques: Monte-Carlo methods, Numerical computation techniques, Lag models, distribute lag model and cob-web model. Discrete system simulation: Different Queuing models and studies. Simulation languages: Simscript and GPSS. Simulation system building paradigms: time-oriented and event-oriented, message-oriented, knowledge-based. Simulation engine development. Analysis of simulation output: Estimation methods, simulation statistics, replication of runs, batch means, regenerative techniques, time series analysis, spectral analysis and autoregressive means. Simulation of business applications: equipment maintenance, warehouse management, facility utilization, workflow management, project management.

Recommended Books :

- G. Gordon: System simulation, Prentice Hall 2003
- J. M. Carroll: Simulation using personal computers; 001.64044, C239. 2004
- B. S. Gottfried: Elements of stochastic process simulation, 001.424, G71E.
Journals : Simulation and Proceedings of Conferences on Simulation 2002.

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5MCA5 (B) Embedded Systems

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

Introduction to embedded system: An embedded system, processor, hardware unit, soft ware embedded into a system, Example of an embedded system, OS services, I/O, N/W, O/S, Real time and embedded OS. (06)

Processor and memory organization: Structural unit in as processor, processor selection for an embedded systems. Memory devices, memory selection for an embedded system, allocation of memory to program statements and blocks and memory map of a system. Direct memory accesses. (09)

Devices and buses for device networks: I/O devices, serial communication using FC, CAN devices, device drivers, parallel port device driver in a system, serial port device driver in a system, device driver for internal programmable timing devices, interrupt servicing mechanism, V context and periods for switching networked I/O devices using ISA, PCI deadline and interrupt latency and advanced buses. (09)

Programming concepts and embedded programming in C: Microchip PIC microcontroller/Motorola MC68HC11: Introduction, CPU architecture registers instruction sets, addressing modes, timers. Interrupts, ITC bus operation, serial EEPROM, ADC, UART, serial programming /parallel slave port (08)

Program modeling concepts in single and multiprocessor systems: software development process, modeling process for software analysis before software implementation, programming model for the event controlled or response time constrained real time programs, modeling of multiprocessor system. (08)

Intel-process communication and synchronization of processors tasks: and threads; multiple process in an application, problems of sharing data by multiple tasks and routines, inter process communications. RTOS task scheduling models interrupt literacy and response times, performance metric in scheduling models, standardization of RTOS, list of basic functions, fifteen point strategy for synchronization. (12)

Text Books:

1. Raj Kamal, "Embedded systems Architecture, Programming and design", TMH., 2004
2. I B Peatman, "Design with PIC microcontroller", Pearson Education Asia, 2004
3. J. W. Valvano, "Embedded Microcomputer system – Real time interfacing", Thomson Learning Publishing, 2000
4. Jane W. S., Liu, "Real time systems", Pearson Education Asia Pub, 2004
5. Embedded Systems Design, Oliver Bailey, dreamtech press, Sept. 2004

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5MCA5(C) BIOINFORMATICS

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

1. BIOINFORMATICS AND THE INTERNET

Internet Basics, Connecting to the Internet, Electronic Mail, File Transfer Protocol, The World Wide Web
(02)

2. THE NCBI DATA MODEL

SEQ-Ids: What's in a Name?, BIOSEQs: Sequences, BIOSEQ-SETs: Collection of Sequences, SEQ-ANNOT: Annotating the Sequence, SEQ-DESCR: Describing the Sequence, Using the Model, Conclusions
(04)

3. THE GENBANK SEQUENCE DATABASE

Introduction, Primary and Secondary Databases, Format vs. Content: Computers vs. Humans, The Database, The GenBank Flatfile: A Dissection, Concluding Remarks
(02)

4. SUBMITTING DNA SEQUENCES TO THE DATABASES

Introduction, Why, Where, and What to Submit?, DNA/RNA, Population, Phylogenetic, and Mutation Studies
Protein-Only Submissions, How to Submit on the World Wide Web, How to Submit with Sequin, Updates, Consequences of the Data Model, EST/STS/GSS/HTG/SNP and Genome Centers, Concluding Remarks, Contact Points for Submission of Sequence Data to DDBJ/EMBL/GenBank
(04)

5. STRUCTURE DATABASES

Introduction to Structures, PDB: Protein Data Bank at the Research Collaboratory for Structural Bioinformatics, RCSB), MMDB: Molecular Modeling Database at NCBI, Structure File Formats, Visualizing Structural Information, Database Structure Viewers, Advanced Structure Modeling, Structure Similarity Searching
(04)

6. GENOMIC MAPPING AND MAPPING DATABASES

Interplay of Mapping and Sequencing, Genomic Map Elements, Types of Maps, Complexities and Pitfalls of Mapping, Mapping, Data Repositories, Mapping Projects and Associated Resources, Practical Uses of Mapping Resource
(04)

7. INFORMATION RETRIEVAL FROM BIOLOGICAL DATABASES

Integrated Information Retrieval: The Entrez System, LocusLink, Sequence Databases Beyond NCBI, Medical Databases
(04)

8. SEQUENCE ALIGNMENT AND DATABASE SEARCHING

Introduction, The Evolutionary Basis of Sequence Alignment, The Modular Nature of Proteins, Optimal Alignment Methods, Substitution Scores and Gap Penalties, Statistical Significance of Alignments, Database Similarity , searching, FASTA, BLAST, Database Searching Artifacts, Position-Specific Scoring Matrices, Spliced Alignments , Conclusions (06)

9. CREATION AND ANALYSIS OF PROTEIN MULTIPLE SEQUENCE ALIGNMENTS

Introduction, What is a Multiple Alignment, and Why Do It?, Structural Alignment or Evolutionary Alignment?, How to Multiply Align Sequences, Tools to Assist the Analysis of Multiple Alignments, Collections of Multiple Alignments (04)

10. PREDICTIVE METHODS USING DNA SEQUENCES

GRAIL, FGENEH/FGENES, MZEF, GENSCAN, PROCRUSTES, How Well Do the Methods Work?, Strategies and Considerations (04)

11. PREDICTIVE METHODS USING PROTEIN SEQUENCES

Protein Identity Based on Composition, Physical Properties Based on Sequence, Motifs and Patterns, Secondary Structure and Folding Classes, Specialized Structures or Features, Tertiary Structure, (04)

12. EXPRESSED SEQUENCE TAGS (ESTs)

What is an EST?, EST Clustering, TIGR Gene Indices, STACK, ESTs and Gene Discovery, The Human GeneMap, Gene Prediction in Genomic DNA, ESTs and Sequence Polymorphisms, Assessing Levels of Gene Expression , using ESTs (04)

13. SEQUENCE ASSEMBLY AND FINISHING METHODS

The Use of Base Call Accuracy Estimates or Confidence Values, The Requirements for Assembly Software, Global Assembly, File Formats, Preparing Readings for Assembly, Introduction to Gap4, The Contig Selector, The Contig Comparator, The Template Display, The Consistency Display, The Contig Editor, The Contig Joining Editor, Disassembling Readings, Experiment Suggestion and Automation, Concluding Remarks (06)

Textbook:

1. Address Baxevanis and Francis Ouellette, "Bioinformatics", Wiley Interscience, 2001. ISBN 0-471-38391-1.
2. Bioinformatics – A Beginner's Guide, Jean-Michel Claverie and Cedric Notredame 2005

Required textbook: *Bioinformatics, Sequence and Genome Analysis*, by David W. Mount; Cold Spring Harbor Laboratory Press, 2005

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5MCA5(D) Neural Networks

Note: The total number of hours allotted for each subject in a semester is 52 hrs

The number of theory hours per week is 4 hours.

The evaluation pattern for each paper is CE 20 + UE 80 = Total 100

Unit 1: Neural networks as computational models. The classification problem. The neuron as a classifier. Rosenblatt's perceptron. Rosenblatt's convergence theorem. Minsky and Pappert's counter example. **(10)**

Unit 2 : Class separability. Cover's counting theorem. Separability of random variables. Generalization according to Cover. Nonlinear separability according to Vapnik and Chervonenkis. The VC dimension. Generalization according to Vapnik and Chervonenkis. **(10)**

Unit 3: Mapping multi-variable binary functions by neural networks. Existence and uniqueness theorems. Continuous function approximation by neural networks. Regularization. Learning and information storage in neural networks. The back propagation method. Hebbian learning **(12)**

Unit 4: Associative memories: Hopfield's and Kanerva's models. Storage capacities. Error correction. Probabilistic networks. Bayesian methods. **(10)**

Unit 5: The dynamics of discrete networks. Convergence and oscillations. The dynamics of continuous nonlinear networks in time and space. Domains of attraction and rate of convergence. Some real-world examples. **(10)**

Text Book:

1. Neural Network Fundamentals: Algorithms and Applications, Tata McGraw Hill, 2003

Reference Books :

1. M. H. Hassoun, Artificial Neural Networks, MIT Press, 1995
2. S. Haykin, Neural Networks, Macmillan, 1994, C. M. Bishop, Neural Network for Pattern Recognition, Clarendon Press, Oxford, 1995

***CE – Continuous Evaluation, UE – University Examination**

5MCA6 Software project Management Lab

The students are supposed to develop a mini – project for above mentioned lab. The students can do the project in a group (team) consisting of not more than 4 students. A project report must be submitted by each team.

5MCA7 LINUX Programming Lab

1. Write a program to implement any 10 Linux Commands.
2. Write a Linux program to Copy a file.
3. Write a Linux program to create 5 child processes and kill these processes in both orders (Ascending & Descending) .
4. Write a Linux program to store data in a file and compress it.
5. Write a Linux program to control the process and assign security.
6. Write a shell program to find whether a given number is prime or not.
7. Write a Linux program for sending and handling mail.
8. Write a Linux program to create two directories and store ten files in one directory using file related commands to transfer all files to other directory.
9. Write a program to demonstrate IPC (Inter process communication) using pipes.
10. Write a program to implement the following commands :
EXEC, FOR, EXIT, WAIT
11. Write a program to demonstrate any four signals and interrupts.
12. Write a program to display a given number in terms of words (eg: 1234 one two three four) using switch.
13. Write a program to implement the following commands :
write, read, wall, grep, chmod

5MCA8 ELECTIVE III MINI PROJECT

The students are supposed to develop a mini – project for above mentioned lab. The students can do the project in a group (team) consisting of not more than 4 students. A project report must be submitted by each team.

SIXTH SEMESTER

Individual Project Work and Viva Voce

Duration of the project is six months. During the project work the students are to interact with the Internal guides / External guides.

The evaluation pattern is:

IA	- 150
Project demo + Viva	- 350
Total marks	- 500

MASTER OF BUSINESS ADMINISTRATION REGULAR (DAY) COURSE
Revised syllabus (with effect from 2007-2008)

CREDITS

The university uses the concept of credits and one credit is equivalent to 10 class room contact hours.

COURSE MATRIX

FIRST SEMESTER – BASIC SUBJECTS

PAPER	SUBJECT	CREDIT	I.A	U. E	TOTAL MARKS
1.1	Managerial Communication	6.0	25	75	100
1.2	Accounting for Managers	6.0	25	75	100
1.3	Organisation Behaviour	6.0	25	75	100
1.4	Managerial Economics	6.0	25	75	100
1.5	Bumastics	6.0	25	75	100
1.6	Information Technology for Business	6.0	25	75	100
1.7	Business Perspectives	6.0	25	75	100
TOTAL		42.0	175	525	700

SECOND SEMESTER – CORE SUBJECTS

PAPER	SUBJECT	CREDIT	I.A	U. E	TOTAL MARKS
2.1	Research Methodology & Technical Writing	6.0	25	75	100
2.2	Financial Management	6.0	25	75	100
2.3	Production and Operations Management	6.0	25	75	100
2.4	Human Resource Management	6.0	25	75	100
2.5	Marketing Management	6.0	25	75	100
2.6	Quantitative Methods & Operations Research	6.0	25	75	100
2.7	Legal Aspects of Business	6.0	25	75	100
TOTAL		42.0	175	525	700

THIRD SEMESTER – CORE SUBJECTS & SPECIALISATIONS

PAPER	SUBJECT	CREDIT	I.A	U. E	TOTAL MARKS
3.1	Entrepreneurship Development	6.0	25	75	100
3.2	Business Ethics & Corporate Governance	6.0	25	75	100
3.3	Electives 1 from specialisation	6.0	25	75	100
3.4	Electives 2 from specialisation	6.0	25	75	100

3.5	Electives 3 from specialisation	6.0	25	75	100
3.6	Electives 4 from specialisation	6.0	25	75	100
3.7	Electives 5 from specialisation	6.0	25	75	100
	Internship Report and Viva-Voce	3.0	-	-	50
TOTAL		42.0	175	525	750

FOURTH SEMESTER – CORE SUBJECTS & SPECIALISATIONS

PAPER	SUBJECT	CREDIT	I.A	U. E	TOTAL MARKS
4.1	Strategic Management	6.0	25	75	100
4.2	International Business	6.0	25	75	100
4.3	Electives 1 from specialisation	6.0	25	75	100
4.4	Electives 2 from specialisation	6.0	25	75	100
4.5	Electives 3 from specialisation	6.0	25	75	100
4.6	Electives 4 from specialisation	6.0	25	75	100
4.7	Electives 5 from specialisation	6.0	25	75	100
	Dissertation	12.0	-	-	200
	Dissertation Viva-Voce	0.0	-	-	50
TOTAL		42.0	225	525	950

ELECTIVES TO BE OFFERED IN III & IV SEMESTERS

1. Agri-Business management
2. Bank Management
3. Entrepreneurship
4. Finance
5. Human Resource Management
6. Information Technology
7. Insurance & Risk Management
8. International business
9. Management of NGO's & NPO's
10. Manufacturing management
11. Marketing

12. Services Management
13. Event & Media Management
14. Rural Management

**THE UNIVERSITY RESERVES THE RIGHT TO OFFER OR NOT TO OFFER ANY OF
THE ELECTIVES LISTED ABOVE**

SPECIALISATION

A stream of electives will be offered. These will be developed and updated from time to time. To qualify for a specialization in a stream, a student will have to take a minimum of 5 elective courses in a stream to qualify for a specialization area. This will facilitate students to specialize in more than one stream of specialization. A student, however, can choose such combinations which will help him / her to have dual specialization depending on the courses offered in the specialization scheme. A student who fails to choose at least five papers in one of the electives shall not be eligible for any specialization.

LESSON PLAN AND COURSE OUTLINE

The faculty members concerned will be required to make a course outline available to the students. This should cover objectives of course, methodology to be adopted, session wise details of topics, required readings, additional readings, case studies and assignments of course.

**SELF DEVELOPMENT AND ENRICHMENT (NON CREDIT) COURSES TO DEVELOP
SOFT SKILLS**

The Institutions are required to offer the following non credit courses in order to enhance soft skills among the students. Although there is no examination for these courses it is very essential to keep a record of the performance of the student in the such courses offered and colleges shall send a report and teaching plan to the Director, CBSMS Bangalore University, Bangalore for information.

- Introduction to communications, Inter personal skills
- Listening skills
- Group communications, team work, Interviews
- Writing skills – letters, memos, reports

- Writing skills – persuasion, marketing, CVs
- Stress management
- Public speaking skills – Stage fear, eye contact and preparation
- Public speaking skills – Voice, modulation, gestures and postures
- Power point and presentation skills
- Use of Graphics, slides, video and audio
- Negotiations and Conflict management
- Rapid reading skills
- Meetings, agenda, minutes and conducting meetings
- English language and relevance to business communications
- Corporate and cyber communications

MANAGERIAL COMMUNICATION

OBJECTIVES:

The course is aimed at equipping the students with the necessary techniques and skills of communication to inform others inspire them and enlist their activity and willing cooperation in the performance of their jobs.

MODULE - 1

COMMUNICATION IN BUSINESS: Importance of Communication Forms of Communication, Communication Network of the Organization; Process of Communication: Different Stages, Difference Between Oral and Written Communication

MODULE - 2

ORAL COMMUNICATION: Fundamentals of Oral Communication: Introduction, Barriers and Gateways in Communication, Listening, Feedback, Telephonic Messages, Public Speaking, and Presentation of Reports, Power point presentation, body language, non-verbal, facial expressions, communication and emotional intelligence, creativity in oral communication,

persuasive communication, communication through organizing various events like conferences, committee meeting, press meets, seminars, fests and the like.

MODULE - 3

REPORT WRITING: Writing an Effective Report: Stages of Writing, Composing Business Messages, Style and Tone; Five Ws and one H of Report Writing, Planning and Types of Reports, Divisions, Numbering and use of Visual Aids, creativity in written communication, use of picture, diagram in written communication.

MODULE - 4

BUSINESS COMMUNICATION: Writing Commercial Letters: Business Letter Format, Types of Letter – Routine Business Letters, Sales Letters, Resume and Job Applications, Business Memos, E- Mail Messages, Proposals, Technical Articles, Telegrams, Telex Message, Facsimiles, Electronic Mail, Handling a Mail, Maintaining a Diary, Legal Aspects of Business Communication, Negotiation Skills.

MODULE-5

ROUTINE CORRESPONDENCE: circulars, drafting notices, handling complaints, evaluating interview performance, articles, formal invitations, proforma for performance appraisal, letters of appointment, captions for advertising, company notice related shares, dividends, MoA, AoA, Annual Reports, Minutes of Meeting, action taken report on previous resolution.

BOOKS RECOMMENDED

1. Scot Ober, Contemporary Business Communication, Biztantra
2. Bovee, Thill and Schatzman, Business Communication today, Pearson
3. Nageshwar Rao and Rajendra Das, Business Skills, HPH
4. Mary ellen Guffy, Business Communication, Thomson
5. M Ashraf Rizvi, Effective Technical Communication, TMH
6. Meenakshi Raman and Sangeeta Sharma, Technical Communication, Oxford
7. Micheal Osborn and Suzanne Osborn, Public Speaking, Biztantra
8. John Seely, Oxford Writing and Speaking, Oxford
9. Parag Diwan, Business Communication, EB

ACCOUNTING FOR MANAGERS

OBJECTIVES

To enable the students gain knowledge about concepts, principles and techniques of accounting and to enable the students use financial and cost data in planning, decision making and control.

MODULE: 1

Introduction to financial accounting, uses and users of accounting information, generally accepted accounting principles and the accounting environment, the role of accounting in capital market and corporate governance. Recording of business transaction, classification of commonly used accounts, the double entry system, journal, Ledger and trail balance.

MODULE: 2

Measurement of Business Income and Financial position, preparation of Profit and loss account, balance sheet, understanding of corporate Financial Statements in annual reports.

MODULE: 3

Valuation of Fixed assets, depreciation accounting, valuation of inventories (as per respective accounting standards issued by Accounting Standard Board of Institute of Chartered Accountants of India)

MODULE: 4

Financial statement analysis, objectives, standards of comparisons, sources of information, Techniques of financial statements analysis: Ratio analysis, du-pont analysis, Trend analysis, common sized analysis, fund flow statements, cash flow statements. (As per AS-3)

MODULE: 5

Introduction to cost accounting, concepts and classification, standard costing and variance analysis, budgetary control, absorption costing and marginal costing, applications of Marginal Costing, Cost-volume – profit analysis, Concepts of Target costing, activity based costing and life cycle costing.

BOOKS RECOMMENDED

1. R. Narayanaswamy, Financial Accounting, PHI
2. Nitin Balwani, Accounting and Finance, EB
3. Dr. Jawaharlal, Accounting for Management, HPH
4. Khan and Jain, Management Accounting, TMH
5. Louderback and Holmen, Managerial Accounting, Thomson
6. Ambrish Gupta, Financial Accounting for Management, Pearson
7. Robert Anthony, David Hawkins and Kenneth Merchant, Accounting, TMH
8. James Stice and Michael Diamond, Financial Accounting, Thomson
9. Tulsian, Financial Accounting, Pearson
10. Warren Reeve Fess, Financial Accounting, Thomson
11. Bannerjee, Financial Accounting, EB

ORGANISATIONAL BEHAVIOUR

OBJECTIVES

To enhance understanding of the dynamics of interaction between individual and the organisation facilitate a clear perspective to diagnose and effectively handle human behavior issues in organizations and Develop greater insight into their own behavior in interpersonal and group team situations. And Acquire skills in influencing people in organizations, to provide to the students a Foundation of knowledge in organizations and help them to become aware of the influence of organisation, structure on the attitudes behavior performance of people working in organizations.

MODULE-1

Organizational Behavior and Management functions of management. What Manager do elements of an organisation, role of a manager in an organisation, why study organizational behavior, an organizational behavior model, learning organizations.

MODULE 2

Foundations of individual behavior; Personality, shaping of personally, determinants of personality. The self concept, self esteem and self efficiency, perception, perceptual process, managing the perceptual process, Learning Process, Reward System and Behavioral management, The Theoretical process of learning, Principles of Learning, Reward and Punishment, Organizational Reward Systems

MODULE 4

Attitude formation, functions, change of attitudes, values, types of attitudes

MODULE 5

Management of Motivation: Motivation in work settings managerial issues and challenges. Theories, Maslows Need theory, K McGregor theory X&Y, Hertzberg's Motivation hygiene theory, Vroom's Valance and instrumentality.

MOLDULE 6

Team Building and group dynamic, working teams and team effectiveness. Intra team dynamics, influence of the group on individual group decision making, inter group relations collaboration, conflict management and Change Management.

MODULE 7

Dynamics of managerial leadership, what is leadership, transition of leader ship theories, leadership, theories, power and politics leadership and management change

MODULE 8

Behavior structure, process & Design: the course mainly connected with nature of management – Introduction to organizations the structural Perspectives, dimensions of structure.

BOOKS RECOMMENDED

1. Uday Pareekh, Organizational Behaviour, Oxford
2. Stephen Robbins and Timothy Judge, Organizational Behaviour, PHI
3. Fred Luthans, Organizational Behaviour, TMH
4. Steven Robbins and Seema Sanghi, Organisational Behaviour, Pearson
5. P Subba Rao, Management of Organizational Behaviour, HPH
6. Gregory Moorhead and Ricky Griffin, Organizational Behaviour, Biztantra
7. Debra Nelson and James Quick, Organisational Behaviour, Thomson
8. PG Aquinas, Organization Behaviour, EB

MANAGERIAL ECONOMICS

COURSE OBJECTIVE

The course will sharpen their analytical skills through integrating their knowledge of the economic theory with decision making techniques. The course covers the standard topics of managerial economics that are crucial to understanding the behavior of business firms in a global setting.

MODULE 1: NATURE, SCOPE AND METHODS OF MANAGERIAL ECONOMICS

Scarcity, choice and allocation problems in business. Basic factors in business decision making: Marginalism, Equi-marginalism, and Opportunity cost principle, Risks and uncertainties, Time value of money. Use of quantitative techniques in managerial economics: Mathematical functions, derivatives, optimization principles and statistical techniques.

MODULE 2: DEMAND ANALYSIS, ESTIMATION AND FORECASTING

Demand theory. Types of demand. Demand elasticity: Types, measurement and factors. Elasticity of demand and marginal revenue. Uses of elasticity concept in business decision making. Estimation of Demand function. Demand forecasting: Importance and methods. Qualitative and quantitative techniques.

MODULE 3: PRODUCTION ANALYSIS

Production functions with one-variable and two-variable inputs. Returns to a factor and returns to scale. Isoquants, isocost curves and ridgelines. Optimum factor combination. Elasticity of output and Elasticity of substitution. Empirical production functions. Forms of Production function. Cobb-Douglas and CES production functions. Production possibility analysis. Optimum product mix of a multi-product firm.

MODULE 4: COST AND REVENUE ANALYSIS

Cost theory and its applications: Types of costs. Theoretical and Empirical cost curves. Short-run and long-run cost curves. Derivation of cost functions from production functions. Empirical estimation of cost functions. Economies of scale versus economies of scope. Optimum firm. Learning curve. Cost control and cost reduction. Revenue concepts and functions. Break-even analysis.

MODULE 5: MARKET STRUCTURE AND PRODUCT PRICING

Features of and pricing-output decisions in perfect competition, monopoly, oligopoly and monopolistic competition. Equilibrium of the firm and of industry under different market conditions. Degree of monopoly power. Discriminating monopoly. Welfare triangle. Pricing methods and practices of modern business firms: Cost-based and demand-based pricing strategies.

MODULE 6: THEORIES OF THE FIRM AND PROFIT

Alternative objectives of the firm. Profit maximization versus sales maximization objectives. Traditional, behavioral and managerial theories of the firm. Accounting profit versus Economic Profit. Theories of Profits.

BOOKS RECOMMENDED

1. Atmanand, Managerial Economics, EB
2. Sk Misra and VK Puri, Indian Economy, HPH
3. Dominick Salvatore, Managerial Economics, Thomson
4. Damodaran, Managerial economics, Oxford
5. Keating and Wilson, Managerial Economics, Biztantra
6. Craig Peterson, Chris Lewis and Sudhir Jain, Managerial Economics, Person
7. Chirstopher Thomas and Charles Maurice, Managerial Economics, TMH
8. Mankar, Business Economics, McMillan
9. Paul Keat and Philip Young, Managerial Economics, Pearson

BUSINESS MATHEMATICS AND ANALYTICS

OBJECTIVE

The course facilities the students to develop and hone statistical skills for managerial decision making

MODULE 1

Mathematical basis for managerial decision making, Matrices, Functions linear, quadratic exponential applications, Differentiation, Maxima & Minima Emphasis on cost and revenue functions, Fundamentals of integration, Ratio and Proportion.

MODULE 2

Business Statistics and scope, Application of Statistics in Managerial Decisions making, Definition of Statistics, Measures of Central tendency, dispersion, Skew ness & Kurtosis -interpretation and business applications.

MODULE 3

Probability Theory-meaning and importance, Theorems of probability, conditional probability, joint probability, Baye's Theorem, Random variable, expectation and variance of random variable, Probability distributions-binomial, Poisson, normal and exponential with business application

MODULE 4

Decision Theory, Decision Tree, Decision making under certainty, uncertainty and risk, Bayesian approach

MODULE 5

Sampling, sampling distributions, Introduction to central limit theorem Estimation, confidence interval, Hypothesis testing -basic concept, Hypotheses testing for mean and proportions for small and large samples, ANOVA ONE WAY AND TWO WAY, NON parametric tests, Chi square, sign test, run test, median test rank sum test, Kruskal Walkusm K.S test, Mann Whitney test.

MODULE 6

Index Numbers construction and application, Tests of consistency, Correlation analysis, Methods of correlation analysis, Lag and lead in correlation, Multiple Correlation, Regression analysis Linear and multiple regression, Introduction to regression model building via SPSS, Introduction to time series- secular trend and applications

BOOKS RECOMMENDED

1. Mittal, Sathyaprasad and Pradeep Rao, Mathematics and Statistics for Management, HPH
2. Azel and Sounderpandian, Complete Business Statistics, TMH
3. JK Sharma, Business Statistics, Pearson
4. RS Bhardwaj, Mathematics for Economics and Business, EB
5. RP Hooda, Statistics for Business and Economics, McMillan
6. GC Beri, Business Statistics, TMH
7. BR Dey, Managerial Statistics, McMillan

INFORMATION TECHNOLOGY FOR BUSINESS

OBJECTIVES: The primary objective of this course is to familiarize the student with basic concepts of information technology and their applications to business processes and decision making.

COMPUTER HARDWARE AND SOFTWARE: Application and Systems Software, introduction to Programming and their Classification.

INFORMATION SYSTEMS AND STRATEGIC IMPLICATIONS

Data information systems, difference between data and information, information system activities and resources, system approaches, organizational sub-systems, support system, systems applications in strategy building.

FUNCTIONAL AND ENTERPRISE SYSTEMS: Management Information Systems, Types of Operating Systems – functional and cross functional system, organizational sub systems - Transaction Processing Information Systems, Accounting and Finance Systems, Marketing and Sales Systems, Production and Operation Management Systems, Human Resources Management Systems, e-CRM, SCM, KMS, ERP and BPR.

INTRODUCTION TO E-BUSINESS: Electronic Business, Electronic Commerce, Electronic Commerce Models, Types of Electronic Commerce, Value Chains in Electronic Commerce, E-Commerce in India. Internet, World Wide Web, Internet Architectures, Internet Applications, Web Based Tools for Electronic Commerce, Intranet, Composition of Intranet, Business

Applications on Intranet, Extranets. Electronic Data Interchange - Components of Electronic Data Interchange and Electronic Data Interchange Communication Process.

DATA AND SYSTEMS INTERFACE

Database Management Systems, Systems Analysis and Design

DECISION SUPPORT SYSTEM

DSS and ES, Software for Decision Support, Group Decisions making, Enterprise wide computing, object oriented analysis and design

ETHICAL AND SECURITY ISSUES IN INFORMATION TECHNOLOGY

Need for security, security techniques – firewalls, encrypting, cyber terrorism and other measures preventing misuse of IT.

PRACTICAL: MS Office, Excel, PowerPoint, SPSS.

BOOKS RECOMMENDED

1. Ralph Stiar and George Reynolds, Fundamentals of Information technology, Thomson
2. Introduction to Information Technology, Pearson
3. Williams and Sawyer, Information Technology, TMH
4. Carroll Frenzel and John Frenzel, Management Information Technology, Thomson
5. Wanan Jawadekar, Management Information Systems, TMH
6. Ashok Arora and Akshya Bhatia, Management Information systems, EB
7. Mahadeo Jaiswal and Monika Mital, Management Information System, Oxford

BUSINESS PERSPECTIVES

OBJECTIVES:

The course aims to provide basic concepts and knowledge with regard to a business enterprise and its various functional areas.

MODULE - I

Introduction: Concept, Nature and Scope of Business; forms of business enterprise
Concept of business as a system; Business and Environment Interface; Business objectives; Business Ethics and Values; Code of Conduct and Corporate Governance.

MODULE -2

Key indicators of economic perspectives; Gross Domestic product, sectoral shares, agricultural output, electricity generation, rate of inflation, money supply, foreign trade, forex reserves, exchange rates, economic infrastructure, social indicators.

MODULE 3

Industrial and regulatory perspective of business: Regulatory role of government impact of political environment on business–industrial policy and performance –public sector – privatization –government and business interface –trends industrial production , industrial diversification – SMEs policy and development – incentives for SSIs, Industrial Sickness, Role of BIFR and status of entrepreneurship India

MODULE 4

Social and technological perspectives: Social responsibilities of business, environmental cost audit –Technology policy technology transfer, energy recourse management, R&D environment, incentives for technological research, information system for technology development.

MODULE 5

Monetary and fiscal perceptives: Monetary policy, impact on business, Instruments of monetary policy, fiscal policy, union budget, state budget, finances of union and state and finance commissions.

MODULE 6

Global environment: Meaning and levels of globalization, factors influencing globalization, effected of globalization, concept of MNCs and TNCs- International business salient features of exim policy, international business risk, recent growth trends in major industrial segments.

BOOKS RECOMMENDED

1. Suresh Bedi, Business Environment, EB
2. Francis Cherunilam, Business environment, HPH
3. Saleem, Business Environment, Pearson
4. Justin Paul, Business Environment, TMH
5. Raj Agarwal, Business Environment, EB
6. Adhikary, Global Buisness Management, McMillan
7. Palle Krishna Rao, WTO, EB

RESEARCH METHODOLOGY & TECHNICAL WRITING

OBJECTIVES:

The objective of this course is to develop the research skills of students in investigating the research problems with a view to arrive at objective findings, interpretation of data and conclusions of their investigation in the form of systematic reports. They are also expected to learn basic statistical tools of analysis to sharper their research studies.

MODULE 1

Meaning and significance of Research in Management, Different Approaches to research – Scientific method and non scientific Methods, Types of research – Historical studies, case studies, survey and experimental studies, criteria for good research, the manager and researcher relationship.

MODULE 2

Formulation of research problem, Defining research problem, Generating research hypothesis, Research process, Research Design, Classification of research designs, Need for Research design, Features of good research design, Research proposal

MODULE 3

Sampling Techniques, Steps in sampling, Types of sample Design – probability and Non Probability sampling designs, size of sample, sampling errors, concept of Measurement and scaling, Scaling techniques, characteristics of sound measurement.

MODULE 4

Sources of data – primary vs. secondary data, sources of primary data – observation, Interview methods, survey method, questionnaire construction and design.

MODULE 5

Processing of Research data – Editing, coding, classification and Tabulation.

MODULE 6

Hypothesis testing – Null and alternate hypothesis, level of significance, one and two sample tests, Measures of central tendency, Measures of variation, Measures of Dispersion and skewness, Test of randomness, correlation and Regression analysis, ANOVA, Discriminate Analysis, cluster Analysis, Data Analysis by software packages.

MODULE 7 Technical Report writing, Types of reports objectives and function of report formal and informal, report writing process, target audience, pre-research proposals, progress reports, final reports, guidelines for effective writing, Research report format, Presentation of a report, Persuasive nature of reports, Reports for Decision Making, technical proposal, instructions manuals, precis writing and reporting committee findings.

BOOKS RECOMMENDED

1. OR Krishnaswami & Rangantham, Methodology of Research, HPH
2. Donald Cooper and Pamela Schindler, Business Research Methods, TMH
3. Dipak Kumar Bhattacharyya, Research Methodology, EB
4. KN Krishnaswamy, Sivakumar and Mathirajan, Management Research Methodology, Pearson
5. Wiilam Zikmund, Business research Methods, Thomson
6. Panneerselvam, Research Methodology, PHI
7. Daniel Riordan and Steven Pauley, Technical Report Writing Today, Biztantra
8. Alan Bryman and Emma Bell, Business Research Methods, Oxford
9. William Trochim, Research Methods, Biztantra

FINANCIAL MANAGEMENT

OBJECTIVE: To provide a strong conceptual foundation for corporate finance and an overview of the global and Indian context.

MODULE – 1:

INTRODUCTION TO FINANCIAL MANAGEMENT: Scope, Objectives, Functions, Role of Financial Manager, Interface of Financial Management with other functional areas, the financial environment: Markets and Institutions.

MODULE – 2:

FUNDAMENTAL CONCEPTS IN FINANCIAL MANAGEMENT: Risk and Return trade off, Risk in a portfolio context, Measuring portfolio Risk, Capital Asset pricing model, Time value of money, Valuations of bonds and stocks.

MODULE – 3:

INVESTMENT DECISIONS: Nature and importance of capital budgetary process, Basic principles in estimating costs and benefits of investments, Appraisal criteria – pay back period, Average rate of return, Net present value, Benefit cost ratio, Internal rate of return, Risk analysis in capital budgeting.

MODULE – 4:

COST OF CAPITAL AND SOURCES OF FINANCE: Cost of debt, Cost of Equity and reserves, Cost of preferred stock, weighted average cost of capital, Factors affecting cost of capital. Long term financing: shares, Debentures, Warrants, Term loans, Lease financing, Hybrid financing, Venture capital financing.

MODULE – 5:

CAPITAL STRUCTURE: Introduction, Factors affecting capital structure, Features of an optimal capital structure, Capital structure theories: Net income approach, Net operating income approach, Miller Modigliani propositions I and II, Leverages: Operating, Financial and Combined, Leverage and firm value.

MODULE – 6:

DIVIDEND POLICY: Introduction, Dividend decisions and valuation of firms, Determinants of dividend policy, Dividend theories – relevance and irrelevance: Walter, Garden and M M Hypothesis, Bonus issues, stock split, Buy back of shares, Tax issues.

MODULE – 7:

WORKING CAPITAL MANAGEMENT AND FINANCING: Meaning, Importance, Concepts at working capital, Determinants, Managing various components of working capital, Tools for analysis and managing working capital, Credit management.

BOOKS RECOMMENDED

1. Prasanna Chandra, Financial Management, TMH
2. Khan and Jain, Basic Financial Management, TMH
3. James Van Horne and John Wachowicz, Financial Management, Pearson
4. Brigham & Houston, Fundamentals of Financial Management, Thomson
5. Paresh P Shah, Financial Management, Biztantra
6. Ashok Banerjee, Financial Management, EB
7. Prasanna Chandra, Fundamentals Financial Management, TMH
8. John Wild, Subramanyam & Robert Halsey, Financial Statement Analysis, TMH

PRODUCTION AND OPERATIONS MANAGEMENT

OBJECTIVES

To familiarize the concepts of production and operations management systems and to appraise customer expectations of quality and relationships and to update and Technologies to meet global competition and to understand functions of interrelation departments and decisions involved therein for effective operations management.

OPERATIONS MANAGEMENT

Plant Location Criteria, Plant Layout Types: Product, Process, Cell Layout, Fixed Station, Merits & Demerits: Volume – Variety relationship, Modern Practices of Production Management, Line Balancing, Desired Output, Limited Resources, Product Design Criteria, Work Study, Method Study, Work Measurement, Various Techniques of Method Study and Work Measurement + Problems.

QUALITY MANAGEMENT

Inspection V/S Quality: Seven Stages of Quality, ISO 9000 & ISO 14000, Seven Tools of Quality Circles, Pareto Chart, Cause and Effect Diagram, Histogram, Stratification, Scatter Diagram, Control Charts, Check Sheets, Concept of Total Quality Management + Problems, Excellence in all Subsystem Leading to Organisational Excellence, Introduction to SIX SIGMA, QFD and FMEA & POKAYOKE, Vender Development and Vender Quality Rating, Cases – How to improve quality.

MAINTENANCE MANAGEMENT

Different Types of Maintenance: Breakdown, Preventive, Predictive, condition Maintaining, Total Productive Maintenance (TPM), Concept of OEE (Overall Equipment Effectiveness) + Problem, Concept of “5S” House Keeping.

PLANNING

Material Requirement Planning (MRP), Enterprise Resource Planning (ERP), Production Planning and Control, Master Production Scheduling, Yearly Planning – to Quarterly- to Monthly – to Weekly – to Daily, Capacity Planning and Assessment, Line of Balance, Cost Control V/S Cost Reduction, Concept of Value Engineering.

MATERIAL MANAGEMENT

Inventory Management: RMC Inventory, ABC Analysis, JIT, Lead-time Management, Pareto Principles. WIP: Lean Manufacturing, Line Balancing, SPC. FGS: Push V/S Pull System, Advantages of Pull System. Spares: EOQ & Breakeven Analysis to Reduce Total Inventory Cost, Supply Chain Management & Logistics Management – Introduction.

MANUFACTURING TECHNOLOGY

CIM / CAD Introduction, Automation, Concept of Special Purpose M/C (SPM's), Designing Production Systems at Shop Floor, Work Instructions, Standard Operating Procedure, Monitoring Productivity Measurements, Productivity, Quality, Breakdowns & etc.,

BOOKS RECOMMENDED

1. SN Chary, Production and Operations Management, TMH
2. Upendra Kachru, Productions and Operations Management, EB
3. Chunawalla and Patel, Productions and Operations Management, HPH
4. Martin K Starr, Production and Operations Management, Biztantra
5. Mahadevan, Production and Operations Management, Pearson
6. Kansihka Bedi, Productions and Operations Management, Oxford
7. William Stevenson, Operations Management, TMH
8. Norman Gaither and Greg Frazier, Operations Management, Thomson

HUMAN RESOURCES MANAGEMENT

OBJECTIVES

- To prepare the students to understand the changing environment and its implication for managing the Human Resources to achieve the competitive advantage and corporate excellence.
 - To make the students to understand the linkages between corporate vision mission strategies policies and human resources management.
 - To help the students to understand the intricacies o Human Resources management and acquire skills in effectively managing human resources in whatever functional areas of management they would be engaged
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MODULE 1

Environmental context: New economic policy and changing business, technological, socio-economic and political, legal environment structural reforms their implication for HRM in India; response of the management, workers and unions to structural adjustment.

MODULE 2

The Paradigm shifts in people Management, Emergence of Human Resource Management as a distinct model of people management; Union and non union HRM Comparison of conventions models and HRM MODEL; IS HRM possible in India Various obstacles to its implementation, concept of learning organization and knowledge management.

MODULE 3

Concept of Human Resource Management: Meaning, objectives, scope and functions: Perspectives of Human Resource Management; linking corporate strategies and policies with Human Resources Management.

MODULE 4

Human Resource Planning: Concept of Human Resource Planning meaning objectives scope corporate planning and human resource planning process methods and techniques of human resource planning human resource information system

MODULE 5

Resourcing and recruitment, selection and socialization; legal and social constraints on employment

MODULE 6

Human resources development: Concept, meaning, objectives, training and development programmes, human resources development for managers and workers, HRD movement in India – HRD or HRM for total quality management, HRD experiences of different companies.

MODULE 7

Performance management and appraisal: Concept, objectives, philosophy and process, performance appraisal systems, performance coaching and counseling, performance management for team and team appraisal, career planning and management, promotion and transfers.

MODULE 8

Compensation/rewards system: Significance of reward system in business organization, compensation systems, the dilemma of practice, systems of promoting equity compensation/rewards, dearness allowance, employee benefits, bonus, laws on wages, bonus and social security, managerial compensation.

MODULE 9

Labour management relations: Objectives and theories of industrial relations, law on industrial relations, characteristic features of industrial relations in India, state and industrial relations, labour and industrial relations policy, changing nature of industrial relations, collective bargaining-a method of managing employment relations, productivity bargaining.

MODULE 10

Trade unions and trade unionism: Theories of trade unions, trade union law, trade unionism in India, issues and problems, employees associations, managerial unionism

BOOKS RECOMMENDED

1. VSP Rao, Human Resource Management, EB
2. Wayne F Cascio, Managing Human Resources, TMH
3. Fisher, Schoenfeldt and James Shaw, Human Resource Management, Biztantra

4. Raymond, John, Barry and Patrick, Human Resources Management, TMH
5. Robert Mathis and John Jackson, Human Resource Management, Thomson
6. Gary Dessler, Human Resource Management, Pearson
7. Jyothi and Venkatesh, Human Resource Management, Oxford
8. Angelo DeNisi and Ricky Griffin, Human resource Management, Biztantra
9. Wayne Mondy and Robert Noe, Human Resource Management, Pearson

MARKETING MANAGEMENT

Present to the students an insight into the basic concepts of marketing, Impart an grasp on the crucial topics like market segmentation, buyer behaviour, elements of marketing and marketing strategy and to develop in them application skills towards managerial decision-making based on theoretical knowledge.

MODULE 1: AN INTRODUCTION TO MARKETING AND ITS BASIC CONCEPTS

Meaning and Scope of Marketing, Fundamental Marketing Concepts, Company orientations towards the Marketplace, Marketing and customer value, Strategic Planning, Marketing plan, Marketing in the Indian Economy, implications.

MODULE 2: MARKETING TRENDS

Scanning the environment, marketing intelligence and information system, Market research system, demand measurement and forecasting, data warehousing, data mining, changing consumption pattern of global consumer and Indian consumer.

MODULE 3: CUSTOMER CONCERNS

Building and maximizing customer value, satisfaction and loyalty, constructing a customer database, analyzing consumer markets and key psychological processes, the Buyer decision process and theories of consumer decision-making, measuring customer satisfaction, customer relationship management customer profitability, customer equity, customer life time value, value chain

MODULE 4: STP AND THE MARKETING MIX

Identifying Market Segments and Targets, Brand Positioning, Creating brand equity and Brand Strategy, Product and product mix decisions, management of product lines; Product Life-Cycle marketing strategies, Pricing strategies and programs, Managing Marketing channels, Competitors, Marketing Communication, advertising and sales promotion, Events and Public Relations.

MODULE 5: NEW TRENDS

Direct Marketing, Online marketing Challenges, Network marketing, Implications of Global marketing, (country-of origin effects, marketing Organization), Corporate social responsibility in Marketing, Environmental concerns, internal marketing, outsourcing, benchmarking, supplier partnering, merging, flattening, focusing, accelerating, empowering & customer engagement

MODULE 6: RURAL MARKETING

Rural market environment, Problems of Rural Marketing, Scope, Rural Marketing Strategies, e-choupals.

BOOKS RECOMMENDED

1. Kotler & Koshy, Marketing Management – A South Asian Perspective, Pearson, 2007.
2. Rajen Saxena, Marketing Management, 3rd Edition, TMH
3. S Jayendran, Marketing Management, EB
4. Adrian Palmer, Introduction to Marketing, Oxford
5. Joel R Evan and Barry Bervan, Marketing, Biztantra
6. Czinkota and Kotabe, Marketing Management, Thomson
7. Ramaswamy and Namakumari, Marketing Management, McMillan
8. S.A. Sherlekar, Marketing Management, HPH

QUANTITATIVE METHODS & OPERATIONS RESEARCH

OBJECTIVES

To introduce students to tools and techniques of OR and to equip them to make optimal managerial decisions.

MODULE 1

Introduction to OR, Importance of OR, Scope of OR in business activities, Optimization concept, OR Models: Linear programming, Introduction to LP, Problem formulation, product mix and various managerial applications and Graphical method of problem solving, Alternate solution of LP, Duality in LP, Formulation of dual problems, advantages, its economics interpretation, Sensitivity analysis only just to know no problems need be worked out and software packages to be used to solve LP models.

TRANSPORTATION MODELS

Nature and scope of transportation and allocation models, Methods of allocation, different methods for finding initial solution – VAM, N-W Corner Rule, and other methods, degeneracy. Finding optimal solution, Tests for optimality, Imbalance in total availability and total allocation – impossible shipments, Alternate methods of solutions, and maximization as objective Scope of transportation models.

ASSIGNMENT PROBLEMS

Traveling salesman problem, Row Minimum, Column Minimum, Iteration, Balanced, Unbalanced, Infeasible, Maximization.

MODULE 2

Queuing theory (waiting line), Single server/Single Queue, Essential features of queuing system, Single Queue, Operating characteristics of queuing system, Probability distribution in queuing system, Multi server, description of other queuing models (only description)

SEQUENCING PROBLEMS

Processing 'n' jobs through 2 machines, Processing 'n' jobs through 3 machines, No 2 jobs on 'n' machines

REPLACEMENT MODELS

Replacement of items deteriorating with time, Replacement of items that fail completely, (No group replacement)

MODULE 3

Network models, Introduction to PERT, CPM techniques, Network components, precedence, events, activities, errors and dummies, Critical path analysis, float, Probabilities in PERT analysis, project time calculations, Project crashing, time cost considerations (No resource leveling)

MODULE 4

Inventory models, Meaning and importance of inventory management, , EOQ formula, economic lot size, Problems based in EOQ formula, Types of Inventory control methods

MODULE 5

Theory of games – introduction, two person zero - sum games, Saddle point, Dominance theory, description of other models and their managerial application (only description, no problems and No Graphical method)

SIMULATION

Introduction to basic concepts, Simulation procedures, Application of simulation, critical evaluation of software and using customized software.

NOTE: TEACHERS ARE ADVISED TO EXPOSE STUDENTS TO VARIOUS SOFTWARE PACKAGES, WHEREVER POSSIBLE.

BOOKS RECOMMENDED

1. JK Sharma, Quantitative Techniques, McMillan
2. ND Vohra, Quantitative Techniques in Management, TMH

3. Anderson, Sweeney, Williams, Quantitative Methods for Business, Thomson
4. JK Sharma, Operations Research, McMillan
5. Barry Render, Ralph Stair and Michael Hanna, Quantitative Analysis, Pearson
6. Frederick Hillier and Gerald Lieberman, Operations Research, TMH
7. Natarajan, Balasubramani and Tamilarasi, Operations Research, Pearson

LEGAL ASPECT OF BUSINESS

OBJECTIVES

To equip students to have the glimpses of various business legislations in the global environment and to make students understand legislations and enabling them to assert their rights emerging out business at the same time knowing the compliance of legal requirements of business transactions.

MODULE: 1

Introduction - Overview of Business laws in India - sources of business law. The constitution of India with special reference to economic principles enshrined in the constitution, Article 246 read with Schedule 7 of Indian Constitution. **(BUSINESS RELATED MATTERS ONLY)**

MODULE: 2

THE INFORMATION TECHNOLOGY ACT, 2000: Significance of E- Commerce and E-governance, paperless society importance terms in IT Act, digital signature, certifying authority, computer resources, cyber crimes, offences and penalties.

THE COMPETITION ACT, 2002: Salient features covering essentials of competition, components of competition act, competition commission of India, offences and penalties.

THE RIGHT TO INFORMATION ACT, 2005: Background, salient features covering important terms in the act, powers and functions information officers, transparency, rights of the citizens to get information of the Public Authority (Central and State Government), offences and penalties under the Act.

MODULE: 3

THE CONTRACT ACT, 1872: Salient features covering essentials of Contract, offer, acceptance, consideration, contingent Contracts. Salient features of sale of goods act 1930

THE CONSUMER PROTECTION ACT, 1986: Rights of the Consumer, Defects and deficiency, services included under the act, district forums, state commission, national commission, treatment of complaints of goods and services.

MODULE: 4

THE INDIAN PATENT ACT, 1970 & 2004: Patent, patentee, Inventions and Non-inventions, EMR, grant of patent, opposition to patent, surrender of patent, infringement of patent, WTO and patent rules, decided cases on Basumathi Rice, Turmeric, Tomato and Pharma products.

FOREIGN EXCHANGE MANAGEMENT ACT, 1999: Definition of Foreign Exchange, money changer, rules regarding ownership of immovable property, money laundering, hawala transaction, directorate of enforcement, penalties and offences.

MODULE: 5

INDIAN COMPANIES ACT, 1956: meaning of company, types of company, memorandum of Association, articles of association, IPO, book building, difference between private and public company, different kinds of meeting, agenda, quorum, resolutions, winding up of the companies.

MODULE: 6

WOMEN AND HUMAN RIGHTS AT WORK-PLACE: Gender Equality, harassment of women in organisation, types, fundamentals rights, nature of human rights, NHRC, UN protocol on Human Rights, Job reservation in private sectors, discrimination, whistle blowing, pros and cons, Supreme Court on protecting women rights at workplace.

ENVIRONMENT PROTECTION ACT, 1986: concepts of environment, environment pollution, environment pollutants, hazardous substance, occupier, types of pollution, global warning, causes for ozone layer depletion, remedies, powers and rules of central government to protect and promote environment in India.

BOOKS RECOMMENDED

1. S.S. Gulsan, Business Law, 3rd Edition, EB
2. Akhileshwar Pathak, Legal Aspects of Business, 2nd edition, TMH
3. K.R. Bulchandani, Business Law for Management, 4th edition, HPH.
4. Prof. (Cmde) P.K. Goel, Business Law for Managers, Biztantra
5. C L Bansal, Business and Corporate Laws, EB
6. P. Sarvanvel and S. Sumathi, Business Law for Management, HPH.

3.1 - ENTREPRENEURSHIP AND NEW VENTURE CREATION

Objectives:

- *To make students to understand the different dimensions of entrepreneurship.*
- *To inculcate the spirit of entrepreneurship in students and make them job creators instead of job seekers*
- *To develop the skills required to prepare a Business Plan*

Module 1 THE NATURE AND IMPORTANCE OF ENTREPRENEURS 4 hrs

Nature and Development of Entrepreneurship, Definition of Entrepreneur Today, Entrepreneurial Decision Process, Role of Entrepreneurship in Economic Development, Intrapreneurship, Entrepreneurship, Entrepreneurial Careers and Education, The Future of Entrepreneurship

Module 2 THE ENTREPRENEURIAL AND INTRAPRENEURIAL MIND 6 hrs

The Entrepreneurial Process, Identify and Evaluate the Opportunity, Develop a Business Plan, Determine the Resources Required, Manage the Enterprise, Managerial versus Entrepreneurial Decision Making, Causes for Interest in Intrapreneurship, Corporate versus Intrapreneurial Culture, - Climate for Intrapreneurship, Intrapreneurial Leadership Characteristics, Establishing in the Organization, factors affecting entrepreneurship — qualities of successful entrepreneurship.

Module 3 SMALL & MEDIUM ENTERPRISES (SME) 4 hrs

Role of SME, concept and definitions of SME, government policy and SME in India, growth and performance of SME sector, problems for SMEs, Sickness in SME, criteria to identify sickness, causes, symptoms and remedial measures of sickness, institutional support for SMEs.

Module 4 STARTING THE BUSINESS - BUSINESS IDEA & INNOVATION 8 hrs

Business idea, Opportunity Recognition, Product Planning and Development Process, Establishing Evaluation Criteria, Idea Stage, Concept Stage Product Stage, Test Marketing Stage, Creativity, Innovation and entrepreneurship, barriers to creativity, techniques for improving the creative process, corporate entrepreneurship, causes, climate, intrapreneurial leadership characteristics, Establishing intrapreneurship in the organization

Module 5 LEGAL ISSUES FOR THE ENTREPRENEUR 4 hrs

Various forms of organization, Legal Issues in Setting up the Organization, The various statutory registrations and clearances required.

Module 6 PROJECT PREPARATION AND APPRAISAL**6 hrs**

Project Preparation, feasibility and evaluation, what is the Business Plan? Various types of business plans, Format of business plan, Writing of business plan, Using and Implementing the Business Plan, Measuring Plan Progress, Updating the Plan, Why Some Business Plans Fail, Different sections of the business plan - The marketing plan, The organization plan, The financial plan

Module 7 FINANCING THE NEW VENTURE**6 hrs**

Sources of capital - An Overview, Debt or Equity Financing, Internal or External Funds, Funding from Banks and Financial institutions, Governmental and Developmental Sources, Various schemes, Types of Loans, Procedure, Private Placement, Types of Investors, Private Offerings, Bootstrap Financing, Venture Capital, Nature of Venture Capital, Approaching, presenting and obtaining the funds, FDI

Module 8 MANAGING and GROWING THE NEW VENTURE**8 hrs**

Risk Reduction Strategies for New Entry Exploitation, Market Scope Strategy, Imitation Strategies, and Growth Strategies: Where to Look for Growth Opportunities, Penetration Strategies, Market Development Strategies, Product Development Strategies, Diversification Strategies, turnaround strategies.

Module 9 CORPORATE VENTURING**14 hrs**

The necessity of Corporate Venturing, Various Misconceptions, Creating the Right Environment, Formalizing the Vision for The Venture, Validating the Venture Concept, The Alpha Stage: The Shift from Planning to Product Creation, Building the Prototype of the Business, Testing the Waters, The Beta Launch, From Corporate Venture to Business, Market Calibration and Expansion, Capturing Strategic Value

REFERENCE BOOKS:

1. M.lall, Entrepreneurship, Excel books
2. Vasant Desai :- Dynamics of Entrepreneurial Development and Management-HPH
3. Hisrich, robert d., peters, michael p., and shepherd, dean a: entrepreneurship, tata mcgraw-hill; sixth edition, 2007
4. Mathew J Manimala :- Entrepreneurship at the Crossroads - Biztantra
5. Mohanty – Fundamentals of Entrepreneurship, Prentice Hall of India
6. Zimmerer & Scarborough – Essentials of Entrepreneurship & Small Business Management, Prentice Hall of India

3.2 BUSINESS ETHICS AND CORPORATE GOVERNANCE

OBJECTIVE: To enable students to critically examine ethical dilemmas and to understand the importance of governance mechanisms in a globalized economy.

Module 1 AN OVERVIEW OF BUSINESS ETHICS

10 hrs

Definition and Nature of Business ethics, Need and benefit of business ethics, History of the development of business ethics, Arguments for and against business ethics, Economic issues, Competitive issues, Legal and Regulatory Philanthropic issues, Framework for ethical decision making – Individual factors, organizational factors, Corporate Governance — a dimension of ethical making,

Module 2 INDIVIDUAL & ORGANISATIONAL FACTORS

10 hrs

Moral philosophy — definition and different perspectives, Teleology and Deontology, The relativist perspective, Virtue ethics, Justice and Fairness, The of care, Integration of the various perspectives, Cognitive moral development, Moral reasoning, The role of Corporate Culture and Leadership, structure and business ethics, Interpersonal relationships in organization, The role of opportunity and conflict,

Module 3 EXTERNAL CONTEXT

10 hrs

Ecology: The dimensions of pollution and resource depletion, the ethics of control, the ethics of conserving depletable resources. Consumers: -Markets and consumer Protection, The due care theory, the social costs view of duties, Advertising Ethics, Consumer Privacy

Module 4 INTERNAL CONTEXT — EMPLOYEE

10 hrs

Job discrimination — its nature and extent, Discrimination — utility, rights and justice, Affirmative action, Gender issues, The employee's obligation to the firm, Thee firms duties to the employees, The employee Rights, Need for organizational ethics program, Code of Conduct Ethics training and communication, systems to Monitor and enforce ethical standards, The ethics audit,

Module 5 BUSINESS ETHICS IN A GLOBAL ECONOMY

10 hrs

Ethical perceptions and international business, Global values, the multinational corporation and various ethical issues, cross cultural, cross religion & cross racial issues.

Module 6 CORPORATE GOVERNANCE

10 hrs

Meaning, Accountability issues, current context of CG in India, Board objectives and strategies, role of independent directors, board structure, performance evaluation of board, training and development of directors. Accounting standards & accounting disclosures.

REFERENCE BOOKS:

1. Hartman, Laura P; Perspectives In Business Ethics; Mcgraw-Hill
2. C.V. Baxi, Corporate Governance, Excel Books.
3. O C Ferrell-Business ethics-Biztantra.
4. P.S.Bajaj,Raj Agarawal :-Business Ethics Biztrantra
5. Steiner And Steiner; Government And Society; Mcgraw-Hill
6. Velasquez – Business Ethics: Concepts & Cases, Prentice Hall Of India
7. Prasad – Corporate Governance, Prentice Hall Of India
8. Gopaldaswamy – Corporate Governance, New Age International (P) Ltd.,

M1 - BUSINESS MARKETING

Course objective

The subject is designed to give insights to the students about the applications of marketing concepts in business to business marketing scenario as it is different from consumer marketing due to some inherent characters. As industrial or business marketing is emerging as one of the major employment provider, the subject needs a special attention.

Module 1 BUSINESS MARKETING PERSPECTIVE

14 hrs

Understanding of the concept of Business marketing in contrast with the consumer marketing, Characteristics of Business Marketing, nature of industrial goods and services, Classification of Industrial products. Classification of Industrial customers-commercial enterprises, government, institutions. Unique characteristics of each type of industrial customers. Marketing strategies for each of industrial customer categories, Market segmentation and B2B Marketing.

Module 2 DIMENSIONS OF BUSINESS MARKETING

14 hrs

What is Industrial/Business Marketing; Difference between Business and Consumer Marketing; Nature of Demand in Industrial Markets, Types of Organizational customer; Classifications and characteristics of Industrial Products, Purchasing Orientations and Practices of Business Customers; Environmental Analysis in Industrial/ Business Marketing.

Module 3 MANAGEMENT OF MARKETING CHANNELS

10 hrs

Business marketing channels, participants in the business marketing channel design, channel administration, types of resellers, and selecting channel members, motivating channel members, channel member performance

Module 4 BUSINESS ADVERTISING, SALES PROMOTION & PUBLIC RELATIONS

12 hrs

The role of advertising in Business marketing, managing B-B advertising, publicity, internet based marketing communications, measuring advertising effectiveness, advertising budgets, sales promotion, tradeshows, Role of personal selling in business marketing, sales force organization, recruitment, selection, training, motivation, compensation, performance evaluation, sales effort control, sales territories, quotas, account management

Module 5 PRICING DECISIONS IN BUSINESS MARKETING

10 hrs

Meaning of price, cost fundamentals, industrial pricing process, pricing across PLC, Competitive bidding, strategies for competitive bidding, pricing strategies, pricing objectives, pricing methods

REFERENCE BOOKS:

1. Krishna K Havaldar; Industrial Marketing; Mcgraw-Hill
2. H.S. Mukherjee, Industrial Marketing, Excel Books
3. Industrial Marketing, Robert Reeder, Prentice Hall Of India,pearson
4. Francis Cherunilam-Industrial Marketing - HPH

M2 - SERVICES MARKETING

Objectives:

- *To develop insights in to the field of services marketing;*
- *To make student understand the differences between marketing of goods and services;*
- *To expose the students to marketing in various services industries of India.*

Module 1 INTRODUCTION

12 hrs

Emergence of GATS in world trade — Service sector and Indian economy- Definition and characteristics of services Difference between goods and services — Gaps model of service quality.

Module 2 FOCUS ON THE CUSTOMER

10 hrs

Consumer behavior in services: - Search, experience and credence properties; Consumer choice

Module 3 CUSTOMER EXPECTATIONS

8 hrs

Meaning, types and influencing factors, Customer perceptions: - Customer satisfaction; service quality and service encounters. Customer relationship and marketing research

Module 4 SERVICES MARKETING MIX

15 hrs

4Ps of Marketing: - Service product (including service blueprinting), price, place and promotion. Expanded mix: - people, process and physical evidence.

Module 5 SERVICE INDUSTRIES IN INDIA

15 hrs

Marketing strategies in service sectors like financial, hospitality, wellness (health care), telecom, tourism, retail, NGOs and public utility services,

REFERENCE BOOKS:

1. C. Bhattacharjee, Services Marketing, Excel Books
2. Valarie A Zeithamal, Mary Jo Bitner, Dwayne D Gremler and Ajay Pandit, "Services Marketing" Special Indian Edition, Tata Mc Graw Hill, 2008
3. Dr.S.Sahajan – Services Marketing – HPH
4. Kenneth C Clow , David L. Krutz :- Services Marketing, Biztrantra
5. Christopher Lovelock, and Jochen Wirtz, "Services Marketing- People, technology, strategy", Prentice Hall
6. K Douglas Ioffinan and John E.G Bateson, "Essentials of Services Marketing: Concepts, Strategies and cases", Thomson, 2002
7. Rajendra Nargundkar, "Services Marketing — Text and cases",Tata Mc Graw Hill
8. Ravi Shankar, "Services Marketing — The Indian Perspective," Excel Books
9. R. Srinivasan," Services Marketing — The Indian context", First Edition, Prentice Hall of India, 2004

M3 - SALES AND MARKETING CHANNEL MANAGEMENT

Course Objective

The Course has been designed to understand the importance of sales management and Marketing channel management for the overall success of the marketing efforts of an organization. The course deals with various aspects of sales management for coordinated sales efforts in achieving the over all corporate goals and effective management of marketing channels

Module 1 INTRODUCTION TO SALES MANAGEMENT

4 hrs

Sales Management: Its Nature, Rewards, and Responsibilities, Social, Ethical, and Legal Responsibilities of Sales Personnel

Module 2 PLANNING THE SALES TEAM'S EFFORTS

9 hrs

Building Relationships through Strategic Planning, The Market-Driven Sales Organization, Forecasting Market Demand and Sales Budgets Design and Size of Sales Territories, Sales Objectives and Quotas, **staffing the Sales Team** - Planning for and Recruiting Successful Salespeople, Selection, Placement, and Socialization of Successful Salespeople, **Training the Sales Team** - The Management of Sales Training and Development, Contents of the Sales Training Program: Sales Knowledge and the Selling Process, **Directing The Sales Team** - Motivating Salespeople toward High Performance, Compensation for High Performance, Leading the Sales Team

Module 3 CONTROLLING THE SALES TEAM

6 hrs

Analysis of Sales and Marketing Costs, Evaluation of Salespeople's Performance, Comprehensive Sales Force Cases and Exercises

Module 4 MARKETING LOGISTICS

7 hrs

Logistics and its importance, Functions of Logistics management - Procurement /Purchasing, Inward Transport, Receiving, Warehousing, Stock Control, Order Picking, Materials Handling, Outward Transport, Physical Distribution Management, Recycling, Returns, and Waste Disposal, Importance of Communication in Logistics, Technology in Logistics- Electronic Data interchange (EDI), Artificial Intelligence, Expert Systems, Communication Technology, Bar Coding and Scanning, Streamlining the Logistics Process, Strategic Issues in Logistics Management

Module 5 MARKETING CHANNELS

7 hrs

Evolution of Marketing Channels- The Production Era, The Sales Era, The Marketing Era, Relationship Marketing Era, Channel member and their roles, Roles of Channel Members, Channel Functions, Designing marketing channels - Channel Structure, Channel Intensity, Types of Channel Intermediaries at Each Level, Channel Flows and Costs

Module 6 CHANNEL INTEGRATION**7 hrs**

Importance of Channel Integration, Vertical Marketing Systems, Types of vertical marketing systems - Corporate VMS, Administered VMS, Contractual VMS, Horizontal Marketing Systems, Hybrid channel system, Designing and Managing Hybrid Channel Systems

Module 7 CHANNEL MANAGEMENT**10 hrs**

Recruiting Channel, Members - Recruiting as a Continuous Process, Recruiting Manufacturers, Screening, Criteria for Selecting Channel Members - Sales Factors, Product Factors, Experience Factors, Administrative Factors, Risk Factors, Motivating Channel Members, Distributor Advisory Councils, Modifying Channel Arrangements - PLC Changes, Customer-Driven Refinement of Existing Channels, Growth of Multi-Channel Marketing Systems, Managing Channel Relationships - Cooperation and coordination, Conflict, Power

Module 8 WHOLESALING & RETAILING**10 hrs**

Wholesaling and its importance, Types of Wholesalers - Merchant Wholesalers, Agents and Brokers, Manufacturer's Wholesalers, Strategic Issues in Wholesaling - Target Market Decisions, Marketing Mix Decisions Trends Shaping Wholesale Distribution - Functional Overlap, Increased Services, Pricing and Credit,, Regional Coverage Organizational Form and Size, Impact of Information Technology on Wholesaling - Challenges in Wholesaling -Inventory Management, Sales Management, Promotion Management, Financial Planning and Management - Retailing and its Importance - Importance to Consumers, Source of Employment - Evolution of Retailing and types of retailing

REFERENCE BOOKS:

1. Sales And Distribution Management, Tapan Panda And Sunil Sahadev, Oxford Publications
2. Sales Management, Still And Cundiff, PHI
3. S.L. Gupta, Sales & Distribution Management, Excel Books
4. Marketing Channels, Coughian, Anderson, PHI
5. Sales And Distribution Management; Krishna Havaladar And Cavale; Tata Mcgraw-Hill
6. Sales Management, Dasgupta, PHI

F1 - INVESTMENT ANALYSIS & MANAGEMENT

Course Objective

1. *To provide students with a conceptual framework of evaluating various investment avenues.*
2. *To provide students with a conceptual and analytical framework of different financial instruments, markets, regulations, their risk and returns and strategies in managing funds.*
3. *To familiarize students with portfolio management techniques that challenges a financial manager.*
4. *To give an overview of the global markets and their impact on the domestic markets*

Module 1 INTRODUCTION TO INVESTMENTS

6 hrs

Definition — micro & macro economic concepts relating to investment - investment objective — investment process - investment constraints — investment strategy — investment v/s speculation — arbitrage - gambling — types of investors — investor behavior

Module 2 INVESTMENT AVENUES

7 hrs

bonds — debentures - Preference shares — Equity Shares — Real Estate— commodity markets — bank deposit — insurance — mutual funds — foreign exchange - Money market instruments — derivatives — forward - futures — options — swaps

Module 3 STOCK MARKET & INSTITUTION

9 hrs

Dematerialization of securities, Primary Market — IPO, Book Building, FPO, Rights Issue, Bonus Issue & Preferential Issue, Secondary Market — Cash & Derivatives Markets, Trading Procedure, Margin System, Settlement process, Market Indices, Role of Stock Brokers, Stock Exchanges & SEBI.

Module 4 RISK MANAGEMENT

9 hrs

Definition, meaning and measurement of Risk — Classification of Risk — diversification — Statistical tools used in risk management - techniques of risk mitigation - risk return optimization — credit rating - beta coefficient — hedging – Using derivatives in risk management

Module 5 INVESTMENT ANALYSIS

7 hrs

Sources of information on investment — factors affecting investment — Fundamental analysis — Technical analysis — efficient market Hypothesis

Module 6 INVESTMENT EVALUATION**7 hrs**

Concept — Time value of Money - various valuation methods & models — bond valuation — equity valuation — futures pricing — options pricing — tangible asset valuation, Tax issues relating to investments

Module 7 PORTFOLIO MANAGEMENT**8 hrs**

Concept — Markowitz model — Sharpe, Jensen & Treynor Model CAPM — SML and CML — factor model and arbitrage pricing theory — Portfolio construction, revision & evaluation

Module 8 GLOBAL MARKETS**7 hrs**

Global Investment benefits, World market indexes, Developed and Emerging Markets, ADRs, GDRs, FCCBs, Foreign Bonds, Global Mutual Funds, Relationship between trends in global markets and the domestic markets,

REFERENCE BOOKS:

1. Sudhindra Bhat, Security Analysis And Portfolio Management, Excel Books
2. Fischer And Jordan; Security Analysis And Portfolio Management; Prentice-Hall,pearson
3. Prasanna Chandra; Investment Analysis And Portfolio Management; Mcgraw-Hill
4. Preeti Singh – Investment Management- HPH
5. Bhalla V K; Investment Management; S Chand & Co
6. Alexander & Bailey, Fundamentals Of Investments, PHI
7. Portfolio Management, Kevin, PHI

F2 - FINANCIAL MARKETS & INTERMEDIARIES

Course Objective

- *To provide students with conceptual and regulatory framework within which the financial intermediaries operate.*
- *To familiarize students with the various management and operational aspects of markets and financial intermediaries.*

Module 1 THE NATURE AND ROLE OF FINANCIAL SYSTEM

8 hrs

Structure of a Financial System - Functions of Financial Sector - Financial System and Economic Development — Indian financial system — SEE3I - Financial sector reforms - Reserve Bank of India - Organization and Management -Role and Functions - Monetary Policy of the RBI - Recent Policy Developments

Module 2 BANKS & INSTITUTIONS

12 hrs

Banks — Operations & Special Role of Banks — Specialized Financial Institutions — EXIM, NABARD, HUDCO, SIDBI, IFCI - Universal Banking & Innovations — Securitization — RTGS & ECS - Co—operative Banks — Features, Types, Structure and Growth, Small Savings and Provident Funds - Provident Funds- Pension Funds — Life insurance Companies - General Insurance Corporation

Module 3 NON-BANKING FINANCE COMPANIES

8 hrs

NBFCS. an Overview - Loan Companies - Investment Companies — Leasing & Hire Purchase - Housing Finance — Chit Funds - Mutual Benefit Financial Companies -Venture Capital Funds - Factors & Forfeiting - Credit Rating - Depository and Custodial Services

Module 4 MERCHANT BANKING & FINANCIAL SERVICES

10 hrs

Project appraisal, Designing capital structure and instruments, issue pricing, preparation of prospectus, Issue Management, Underwriting, Mergers & Amalgamations, Corporate Advisory Services, Bought out deals, Private Placement, Institutional Placement, Debt Syndication, Regulation of Merchant Bankers,

Module 5 MUTUAL FUNDS

8 hrs

Organization - Types of Funds - Valuation of Units - Structure and Size Investment Pattern - Return on Investment in Units — Regulations

Module 6 FINANCIAL MARKETS

14 hrs

The stock market in India — Primary and secondary markets — OTC markets — regulations — new issues market — underwriting - Call Money Market - Treasury Bills Market — Commercial Bills Market - Markets for Commercial Paper and Certificate of Deposits - The Discount Market - Government (Gilt — edge) Securities Market. Markets for Futures, Options, and Other Financial Derivatives - Foreign Exchange Markets - Interest Rate Futures Market

REFERENCE BOOKS:

1. Livingston, Miles; Financial Intermediaries; Blackwell
2. Financial Institutes And Markets, Sudhindra Bhat, Excel Books
3. Avadhani – Marketing of Financial Services - HPH
4. Niti Bhasin; Banking And Financial Markets In India 1947 To 2007; New Century
5. Mutual Funds: Data, Interpretation & Analysis, Sahadeven & Thiripalraju, PHI

F3 - TAX COMPLIANCE & MANAGEMENT

Course Objective

To make the student understand the basic concepts of taxation and its computation, the proper compliance of various provisions of the direct and indirect tax laws and to make financial decision considering 'the pros and cons of various tax laws and business functioning

MODULE 1: CONCEPTS AND FRAMEWORK OF TAXATION **10 HRS**

Tax – Meaning, Types, Principles of Direct Taxation; Basics Concepts – Assessee, Assessment, Person, Assessment Year, Previous Year, Heads of Income, Total Income, Tax Planning, Tax Avoidance and Tax Evasion; Residential Status of Individuals and Companies - Incidence of Tax.

Module 2 INCOME TAX **14 hrs**

Heads of income, Computation of Individual Income Tax, Computation of HUF Income Tax, Computation of Corporate Income Tax, Set off and Carry forward of Losses, Fringe benefit Tax, Banking Cash Transaction Tax, Securities Transaction Tax, MAT, TDS & TCS, Tax planning/avoidance/evasion, Returns & Compliance

Module 3 CUSTOMS, CENTRAL EXCISE AND SERVICE TAX **14 hrs**

Procedure relating to levy, valuation and collection of duty, types of duty, exemptions Export Promotion Schemes, Nature of Excise duties, Excisability of Products, Cenvat Credit; Classification of Excisable Goods, Valuation of Excisable goods, Important Central Excise procedures, Service Tax, Concepts, applicability, and procedures, Returns & Compliance

Module 4 SALES TAXES AND CUSTOM ACT **10 hrs**

Nature of Excise duties, Cenvat credit, Excisability of Products, Classification & Valuation excisable goods, important central excise procedure, Introduction to Customs Duty, Procedure relating to levy, valuation & collection of duty, types of duty, Exemption Export promotion schemes.

Module 5 TAX PLANNING AND MANAGEMENT **12 hrs**

Purchase of Assets. — Own funds | Borrowed Funds | Lease, Installment vs. Hire, Make or Buy, Replace or Repair, Capital Structure and Dividend Decisions, Amalgamation and De-merger, Tax implications of international operations

BOOKS FOR REFERENCE:

1. Singhanian, Vinod, "Direct Taxes – Law and Practice", Taxmann Publications.
2. Ahuja, Girish and Gupta, Ravi, "Professional Approach to Direct Taxes", Bharat Publications.
3. Mehrotra and Goyal, "Direct Taxes", Sahitya Publishing.
4. Singhanian, Vinod, "Direct Taxes – Planning and Management", Taxmann Publications.
5. U.S.Datey – Indirect Taxes Law & Practice – Taxman Publications

H1 - HUMAN RESOURCES ACQUISITION AND DEVELOPMENT

MODULE 1 HUMAN RESOURCE PLANNING:

Issues in Strategic Human Resources Management, Human Resource Planning - Definition, Objectives, Importance, Factors affecting HRP, Process of HRP Employee Forecasting – Trend analysis, Ratio Analysis, Scatter Plot, Computerized Forecasting , Delphi Method, Manager Judgment, Supply forecasting.

MODULE 2 JOB ANALYSIS

Meaning, Purpose, Process, Methods of Collecting Data. Job Description – Contents, Writing Job Description, Job Specification, Job Enrichment.

MODULE 3 PROCUREMENT, SELECTION AND INDUCTION

Recruitment- Meaning and Process; Sources of Recruitment, Internal and External Source, Modern Techniques of Recruitment, Sources- Internet Based, Placement Agencies. Selection - Meaning, Essentials of Selection Procedure, Selection Hurdles, Selection Procedure - Application Blank; Employment Tests- Utility and Validity. Employment Interviews- Principles and Techniques, Medical Text, Reference Check Appointment- Terms and conditions. Induction –Meaning, Induction Programme –formal or informal, individual or collective, serial or disjunctive Investiture or Disinvestiture, Requisites of effective programme.

MODULE 4 TRAINING

Concept of Training and Development, Need for training , Importance of Training , Difference between Training and Development, Principles of Training and areas of training. Assessment of Training Needs, Training Methods- On the Job and Off Job Methods, Electronic Training – Computer Based training, Electronic performance support system(EPSS) , Distance and Internet Based Training.

MODULE 5 EVALUATION OF TRAINING

Purpose of Evaluation, Evaluation Process, evaluation of system, evaluation of methodology, evaluation of resource person, evaluation of contents, competency mapping, feedback & control.

REFERENCE :-

1. Ricky W Griffin – Human Resource Management –Biztantra.
2. Richard Regis – Strategic Human Resource Management – Excel books
3. Human Resource Management –Cynthia and Fisher- Biztantra
4. D.K Bhattacharya – Human Resource Planning – Excel Books
5. G. Pandu Naik - Training and Development –Excel Books
6. Dr Janikiranman- Training and Development -Biztantra
7. Thomess Kutti - Training for Development – HPH
8. R.K Sahu – Training for Development – Excel Books

H2 – EMPLOYEE RELATIONSHIP MANAGEMENT

MODULE 1. INDUSTRIAL RELATIONS

Meaning & Objectives, Importance, Approaches to Industrial Relations - Unitary, Pluralistic, Marxist. Role of Three Actors to Industrial Relations – State, Employer & Employees, Causes for poor IR, Developing sound IR. Ethical approach to IR: Idea of trusteeship- Principles & features, Code of conduct.

MODULE 2. TRADE UNION

Meaning, why do workers join unions, Types of trade unions, Theories to trade Union, Trade union movement in India, Problems of trade unions, Functions of trade unions, Measures to strengthen trade unions, Trade union Act – Registration of trade unions, Need for Recognition & Rights to recognition of trade unions, Central trade unions in India.

MODULE 3. INDUSTRIAL DISPUTES

Definition, Causes of Industrial disputes, Types of Industrial disputes, Prevention of Industrial disputes, Settlement of Industrial disputes. Industrial Dispute Act – Conditions to Strikes, Lock-outs, Lay-off & Retrenchment and Laws relating to standing orders.

MODULE 4. COLLECTIVE BARGAINING

Definition, Importance, Prerequisites of collective bargaining – Union bargaining process – Types of bargaining– Collective bargaining in India. Grievance & Disciplinary procedure – Meaning, Need & procedure.

MODULE 5. INTEGRATION OF INTEREST AND MANAGING CAREERS

Career Planning, Factors affecting Career Choices; Career Stages, Career anchors, Need for Career Planning, Managing Promotions, Transfers & Demotions. Individual & organizational problems in Integration. Integration process.

MODULE 6. QUALITY OF WORK LIFE AND QUALITY CIRCLES

Meaning of quality of work life – Quality Circles- Objectives- Process, Structure and problems- workers participation in management and quality circles – Concept of empowerment.

REFERENCE

1. B.D Singh - Industrial Relations – Excel Books
2. Mamoria & Mamoria ; - Dynamics of Industrial Relations in India - HPH

H3 – PERFORMANCE AND COMPENSATION MANAGEMENT

MODULE 1 PERFORMANCE MANAGEMENT

Definition, Objectives, Need for Appraisal, Essentials of performance appraisals and problems of performance appraisal, Methods of Performance Appraisal- Traditional and Modern Methods- Graphic Rating-Scale, Straight Ranking Method, Paired Comparison Method, Critical Incident Method, Group Appraisal, Confidential Methods, Behavioral Anchored Rating Scale (BARS), Assessment centers

MODULE 2 WAGE & SALARY ADMINISTRATION

Nature and Scope, Compensation, wage determination process, Factors Influencing wage and Salary Administration. Wage – Theories of Wages, Types of wages – Time rate, piece rate, debt method, Wage differentials.

MODULE 3 PLANNING FOR IMPROVED COMPETITIVENESS

Diagnosis and Bench Marking, Obtaining Commitment; Determination of Inter and Intra-industry, Compensation Differentials, Internal and External Equity in Compensation Systems.

MODULE 4 INCENTIVES AND FRINGE BENEFITS

Incentives – Def , Types of Incentives, Individual incentives : Measured day Work, Piece work, standard hour, Gain sharing, its advantages and disadvantages, Organisation Wide incentives – Scanlon Plan, Kaiser Plan, Profit sharing, Non-financial incentives, Fringe Benefits – Definition, Objectives, Types of Fringe Benefits

MODULE 5 INDIVIDUAL GROUP VARIABLE COMPENSATION

Pay for Performance, Pay by Seniority, Group Piece rate, Production sharing plan, Employee Profit sharing, Employee stock ownership, Gain Sharing

MODULE 6 INCENTIVES AND RETIREMENT PLANS

Basic Pay, Provisions for Dearness allowance- Calculation of total compensation package, various methods of compensating cost of living, Neutralization factors. Executive Compensation Plan, Retirement Plan

REFERENCE :-

1. B.D Singh - Compensation & Rewards management – Excel Books
2. Cynthia D Fisher –Human Resource Management -5th Edition-Biztantra.
3. A M Sharma – Aspects of Labour Welfare and Social Security - HPH
4. Lawrence Kleiman-Human Resource Management -3rd Edition-Biztantra
5. R.K Sahu – Performance management systems – Excel Books

S1 :SOFTWARE ENGINEERING MANAGEMENT

OBJECTIVE: Understand and appreciate concepts and practices of modern Software Engineering Management.

Module 1: OVERVIEW OF SOFTWARE ENGINEERING

Software Engineering as a discipline, Software processes, Software projects

Module 2: REQUIREMENTS

Requirements engineering processes, System models, Software prototyping, Formal specification.

Module 3: SOFTWARE DEVELOPMENT MODELS

Waterfall model, Spiral model, Incremental Development, Evolutionary Development, Re-use oriented Development

Module 4: DESIGN

Architectural design, Distributed Systems architecture, OO design, Real-time software design, Design with reuse, User Interface design.

Module 5: SOFTWARE QUALITY

Verification and Validation, Software testing, Critical systems validation, CMM and PCMM concepts.

Module 6: MANAGEMENT

Managing people, Software cost construction, Quality Management, Process Empowerment

Module 7: EVOLUTION

Legacy Systems, Software change, Software re-engineering, Configuration Management

S2 :SOFTWARE DESIGN & PROJECT MANGEMENT

MODULE 1: SYSTEM ANALYSIS & DESIGN:

Overview of system analysis & Design: Introduction to different methodologies & structured system analysis – Details of SDLC approach – mini cases – E-R diagrams – DFD concepts – Data dictionary concepts. Structure charts – modular programming – I/O & file design consideration – Entity Life histories (ELH).

MODULE 2: SYSTEM IMPLEMENTATION:

System implementation & maintenance: Implementation Strategies – SW/HW selection & procurement – Control & security – issues of designing & implementing on-line systems – data communication requirements – system conservation approaches & selection issues.

MODULE 3. PROJECT DEVELOPMENT & DATABASE DESIGN

Introduction to Database technologies & CASE tools with specific packages – overview of relational model – Database creation – SQL command – Normalization – designing forms & reports – using CASE tools for system analysis & design-case studies – Cost / benefit analysis – project & resource planning – design & development testing & documentation.

MODULE 4. SOFTWARE PROJECT MANAGEMENT

Software project management: challenges & opportunities – changing technologies & approaches – choice development of methodologies & technical platforms, project management techniques – monitoring & measurement of progress.

MODULE 5. SOFTWARE PROJECT MANAGEMENT

Software project management – elements, cost estimation, manpower planning, Software & Product Metrics – Quality assurance & control-standards & documentation – testing – implementation – training – technology management – quality standards – certificate – handling multiple projects, issues of share development.

Text Books:

1. Senn, J.A. “Analysis & Design of Information Systems”, “McGraw Hill Publications.
2. Beaver, ‘An Introduction to Managing Software Projects’.
3. Marco, T.D. “Structured Analysis & System Specification”, Prentice Hall Publications.
4. C.S.V.Murthy – System Analysis and Design - HPH

S3 :DATABASE MANAGEMENT SYSTEM

MODULE 1: INTRODUCTION

Database systems – Definition – Components – Advantages – Objectives – Evolution.

MODULE 2: MODELS

DBMS Architecture – Associations – Relationships – Mappings between Abstractions – Generalisation – Classifications – Conceptual Data modeling – File Organization – Data Structure – Data models: HDBMS, NDBMS, RDBMS, OODBMS.

MODULE 3: DATABASE DESIGN

Relational Data Model – Relational Algebra – ER Diagrams – Data Dictionary – Normalisation – Boyce Codd Normal Forms – Integrity – Relational Database Languages – Database Administration – File Structures and Indexing.

MODULE 4: OBJECT MODELLING

Object oriented concepts – Structure – Models and Databases – Object life cycle modeling – Objects, Classes, Patterns – Object interaction modeling – Object Oriented Design – UML.

MODULE 5: OPERATIONS AND MANAGEMENT

Client / Server and Databases – Data Warehousing – Query Processing – Concurrency Management – Heterogeneous and Homogenous Systems – Distributed Databases – Controls – Atomicity, Recovery – Security, Back-up and Recovery.

TEXT BOOKS

1. Gary W.Hansen and James V.Hansen, “Database Management and Design”
Prentice Hall
2. C.S.V.Murthy – Data Base Management Systems-HPH



IV SEMESTER COMPULSORY PAPERS

4.1 STRATEGIC MANAGEMENT

4.2 INTERNATIONAL BUSINESS

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4.1 STRATEGIC MANAGEMENT

OBJECTIVE: To integrate the functional areas of management and to enable understand business from a strategy formulation and implementation perspective.

Module 1 CONCEPT OF STRATEGY:

6 hrs

Defining strategy, Levels at which strategy operates, Strategic Decision Making and Approaches to Strategic Decision making, Mission and Purpose, Objectives and Goals, Strategic Business Units, Corporate Planning Process

Module 2 ENVIRONMENT ANALYSIS AND DIAGNOSIS

8 hrs

Concept of Environment and its components, Environment scanning and appraisal, organizational appraisal, Strategic advantage analysis and diagnosis, SWOT analysis

Module 3 STRATEGY FORMULATION & CHOICE OF ALTERNATIVES 12 hrs

Strategies — Modernization, Diversification, Integration, Merger, Take-over and Joint Venture strategies, Turnaround -- divestment and Liquidation strategies, of Strategic Choice — Industry, competitor and SWOT analysis; Synergy and Dysergy, GAP Analysis; Porter's Five forces Model of competition; Mckinsey's 7's framework; GE-9 Cell Model, Bostan's Consultancy Model, Distinctive competitiveness; Selection of matrix, Factors affecting Strategic Choice — Cost, Leadership, Differentiation focus, value chain analysis, bench marking, service blue printing.

Module 4 STRATEGY IMPLEMENTATION

10 hrs

Inter-relationship between formulation and implementation; Issues in strategy implementation, Resource Allocation, Budgets, Organization structure, Matching and strategy, Behavioural Issues — Leadership styles, Corporate culture and values power, Social Responsibilities — Ethics, Building capable organization; Functional Issues — Financial, Marketing, Operations and Personnel Plans an Policies

Module 5 STRATEGY AND STRUCTURE

8 hrs

Structural Considerations, Structure for strategies, Organizational design and change.

Module 6 STRATEGY EVALUATION

8 hrs

Importance, Symptoms of malfunctioning of strategy, Overview of strategic control, techniques of strategic evaluation and control, Control, Tailoring strategy to fit specific industry and company situation, strategy and competitive advantage in diversified agencies, Evaluating the strategies of diversified agencies.

Module 7 CONTEMPORARY ISSUES

8 hrs

Strategies for competing in globalizing markets, New Business Models and strategic for Internet Economy, technology and innovation, entrepreneurial ventures and strategies for SME, strategic issues in Non-profit organizations.

REFERENCE BOOKS:

1. U Kachru, Strategic Management, Excel Books
2. Hitt, Ireland And Hoskisson; Strategic Management; Thompson
3. Hill And Jones; Strategic Management; Biztantra
4. N. Balwani, Strategic Management & Business Policy, Excel Books
5. Thomson And Strickland; Strategic Management; Mcgraw-Hill
6. David – Strategic Management – Concepts And Cases, Prentice Hall Of India
7. Srinivasan, Strategic Management – Indian Context, Prentice Hall Of India

4.2 INTERNATIONAL BUSINESS

OBJECTIVE: To facilitate an understanding of International Business in a multi-polar, multi-cultural world; to examine the critical factors for success in different countries.

Module 1 INTRODUCTION

10 hrs

Definition — Trade and Investment flow — International trade- theories of international trade -Economic theories — forms of international business

Module 2 INTERNATIONAL BUSINESS ENVIRONMENT

10 hrs

Globalization of business — WTO and trade liberalization — emerging issues — implications for India — Regional Trade Blocks — Inter — regional trade among regional groups.

Module 3 GLOBAL BUSINESS STRATEGIC MANAGEMENT

12 hrs

Structural design of MNE's — Strategic planning — Strategic considerations- National VS Global competitiveness.

Module 4 EXIM TRADE.

12 hrs

Export trade, procedure, steps and documentation direction of India's trade, Export financing — document related to export trade — Export marketing —Import trade, procedure and steps documentations and problems, EXIM policy, Balance of payment. Institutions connected with EXIM trade.

Module 5 CONTROL & EVALUATION OF INTERNATIONAL BUSINESS

10 hrs

Control MNE's — approaches to control — the role of information systems — performance measurement — mechanics of measurement — various, performance indicators—Evaluation and Evaluation systems

Module 6 CONFLICT IN INTERNATIONAL BUSINESS & NEGOTIATIONS

6 hrs

Factors causing conflict — Conflict resolution actions — the role of negotiations in international business — the role of international agencies in conflict resolution.

REFERENCE BOOKS:

1. Francis Cherunilam; International Business, Prentice Hall Of India
2. Hill; International Business; Mcgraw-Hill
3. Shukla, International Business, Excel Books
4. Francis Cherunilam- International Business Environment – HPH
5. S.N.Charry :- Elements of International Business, Biztrantra
6. Harrison Et Al; International Business; Oxford
7. Daneils Et Al; International Business; Pearson
8. Hodgetts And Luthans; International Management; Mcgraw-Hill
9. Sundaram & Balck, International Business Environment, Prentice Hall Of India

M4 RURAL AND AGRICULTURAL MARKETING

Objectives:

The course has been designed keeping in mind that the rural Indian market is one of the fastest growing markets in the world. Most of the corporate dealing with both FMCG and durables are already geared up to meet the demands being emerged from rural market The subject has covered to give insights in to the various characteristics, opportunities and problems in marketing the products or services in rural India.

Module 1 OVERVIEW OF RURAL MARKETS AND RURAL MARKETING 8 hrs

Rural economy — size and nature, Rural marketing — definition and scope, Characteristics of Rural markets Taxonomy of Rural markets, Changing patterns, Attractiveness of Rural markets, problems and constraints in rural marketing

Module 2 THE RURAL CONSUMER 10 hrs

Classification of Rural consumers, classification and characteristics of rural consumers, Rural consumer behavior — decision process, brand loyalty, Innovation Adoption, Factors influencing rural consumer behavior, consumer buying process — opinion leadership process — rural shopping habits, growing consumerism - Concepts and process of Rural market Segmentation — bases, Targeting, Positioning

Module 4 STRATEGIES FOR INDIAN RURAL MARKETING 20 hrs

Product Strategy — Scope and significance, Product mix decisions, Product personality, Rural Branding, Product Life Cycle, Rural Pricing — Pricing in Rural Markets, Objectives, policies and Strategies, Rural Distribution—Type of Channels, Distribution Strategies, Promotion — Role of Media in rural market, Conventional Media, Rural communication mix, Media and Creative Strategies, Personal selling — Role and management of rural sales force

Module 5 INTRODUCTION TO AGRICULTURAL MARKETING 10 hrs

Trends in Agricultural Marketing, Agricultural products, Agro processing sector in India — State and characteristics, Food processing sector — Size, scope and future prospects, Defects in Agricultural Marketing

Module 6 AGRICULTURAL MARKETS 12 hrs

Classification of markets, Regulated markets — role and problems, APMC act, Future scenarios, Methods of sales of agricultural products — Hatha, E.'choupal Dara, auction, Agents and Marketing Agencies, Commodity markets and trading,

REFERENCE BOOKS:

1. Krishnamacharyulu And Lalitha Ramakrishnan; Rural Marketing; Pearson Education India
2. Kashyap, Pradeep And Raut, Siddartha; Rural Marketing; Biztantra
3. U.C. Mathur, Rural Marketing, Excel Books
4. Velayudhan, Sanal Kumar; Rural Marketing; Sage
5. Ruchika Ramakrishnan; Rural Marketing; New Century

M5 RETAIL MARKETING MANAGEMENT

Course objective

With the economy in its upswing and consumer purchasing powers and life style is a change, India has become one of the major market for global retail brands and most of them are already in or on their way to be in, This has also triggered many companies also to set up retail chains and thus making retailing as one of the most vibrant growth area. The course has been designed to understand various aspects of retailing management like location, human resource issues, shop management, merchandising and promotion.

Module 1 THE WORLD OF RETAILING

14 hrs

What is retailing, Economic significance of retailing, Opportunities in retailing, The retailing management decision process, Types of retailers, Trends in retail industry, Food retailing, General merchandise retailing, Services retailing, Types of ownership, Non store v/s store based retailing, Electronic retailers, Catalogue and direct mail retailers, Direct selling, Vending machine retailing, Tele vision home shopping, E-Tailing.

Module 2 THE RETAIL CUSTOMER

12 hrs

Generational cohorts, Ethnic diversity, Income, Changing customer demography, Changes in consumer values, Types of buying decisions, Buying process, Factors influencing the decision making process, Market segmentation, Strategic advantage through customer service, Customer evaluation of service quality, GAPs model for improving retail services quality, communicating the service promise

Module 3 RETAIL MARKETING STRATEGIES

10 hrs

What is retail strategy, Target market and retail format, Building a sustainable competitive advantage, International growth opportunities, The strategic retail planning process

Module 4 MERCHANDISING MANAGEMENT

12 hrs

Organizing buying process .by categories, Setting merchandising financial objectives, The assortment planning process, Merchandise budget plans, Open to buy, Allocating merchandise to stores, Analyzing merchandising performance, Branding strategies, International sourcing decisions, Meeting vendors, Establishing and maintaining strategic relationship with vendors

Module 5 STORE LAYOUT, AND RETAIL PROMOTION

12 hrs

Store layout, Space planning, merchandising presentation techniques, Atmospheric, Role of retail communication, Planning retail communication, Retail advertising programme, frequent shopper loyalty programme

REFERENCE BOOKS:

1. Retail Management; Barry Berman And Joel Evans
2. Managing Retailing, Piyush Kumar Sinha, Dwaraka Prasad, Oxford Publications
3. C. Bhattacharjee, Retail Management, Excel Books
4. James Ogden, Denise Ogdden :- IntegratedRetail Management , Biztantra
5. Retailing Management, Levy And Weitz, Mcgraw Hill
6. Retailing Management, Swapna And Pradhan, Mcgraw Hill
7. Retail Management, Gibson

M6 ADVERTISING AND INTEGRATED BRAND MANAGEMENT

Course Objective

The course has been designed to understand the advertising process and advertising industry structure thoroughly. Each component of advertising has been covered to give the student over all importance of advertising in corporate communications. The syllabus also emphasizes on the integrated study of advertising along with brand building and management

Module 1 THE PROCESS: ADVERTISING AND INTEGRATED BRAND PROMOTION IN BUSINESS AND SOCIETY 14 hrs

What is advertising, advertising as a communication process, Advertising as business process, Types of advertising, the economic effects of advertising. **The structure of advertising industry** - The scope and structure of advertising industry, Trends advertising and promotion industry, **The evolution of promoting and advertising brands** - Fundamental influences on evolution of advertising industry, Brand entertainment, **Social, ethical and regulatory aspects of advertising**

Module 2 THE PLANNING: ANALYZING THE ADVERTISING AND INTEGRATED BRAND PROMOTION ENVIRONMENT 14 hrs

The consumer as a decision maker, Modes of consumer decision making, Consumer as a social being, **Market segmentation, positioning and the value proposition** - Identifying the target segments, Segment profiling and targeting, positioning strategies, **Advertising and promotion research** - Developmental advertising and promotion research, Copy research, **Planning advertising and integrated brand promotion**, Advertising plan and its marketing context, Communication objectives v/s sales objectives, Advertisement Budgeting, Role of advertising agency in advertisement planning, Advertisement planning : An international perspective

Module 3 PREPARING THE MESSAGE 12 hrs

Creating brands, in general and across domains, Advertising agencies, creative process and the product, **Message strategy** - Essential message objectives and strategies, **Copy writing** - Copy writing and creative plan, Copy writing for print advertisements, Copy writing for cyber space, Copy writing for broadcast advertisements, The copy approval process, **Art direction and production** - Illustration, design and layout production in print advertising, Art direction and production in television advertising

Module 4 PLACING THE MESSAGE IN CONVENTIONAL AND NEW MEDIA 8 hrs

World of promotional media, Fundamentals of media planning, Media planning process, media strategies, media choices, Contemporary essentials, Media choice and integrated brand promotion, **Media planning** - Strategic planning considerations in media choice

Module 5 INTEGRATED BRAND PROMOTION

12 hrs

Support media, event sponsorship and branded entertainment - Traditional support media, Event sponsorship, Branded entertainment, **Sales promotion and point of purchase advertising** - Definition of sales promotions, Sales promotion directed at consumers, Sales promotion directed towards trade channel and business markets, **Direct marketing** - What is direct marketing, Media applications in direct marketing, **Public relations and corporate advertising** - Public relations, Corporate advertising

REFERENCE BOOKS:

1. Advertising And Sales Promotions, Batra & Kazmi, Excel Books
2. Kelly, Larry D And Jugenheimer, Donald W; Advertising Media Planning – A Brand Management Approach; Prentice Hall India, pearson
3. S.A.Chunawalla – Foundation of Advertising – Theory and Practice – HPH
4. Integrated Advertising, Promotion And Marketing Communication, Clow & Black, PHI
5. Wells, Principles & Practices Of Advertising, PHI
6. Brand Management, H.V. Verma, Excel Books
7. Sharma & Singh, Advertising: Planning And Implementation, PHI

F4 INTERNATIONAL FINANCIAL MANAGEMENT

Course Objective

- *To provide students with a conceptual framework of how financial decisions are undertaken in a multinational company.*
- *To familiarize students with unique economic factors that challenges a financial manager in the international context.*

Module 1: International Financial Environment

10 Sessions

The Finance Function in Global Context, Distinguishing Features of International Finance, International Monetary System, International Financial Flows: Balance of Payments Framework, International Financial System - Markets and Institutions.

Module 2: Foreign Exchange Markets

14 Sessions

Introduction, Structure of Foreign Exchange Market, Mechanics of Currency Trading, Types of Transactions and Settlement Dates, Exchange Rate Quotations and Arbitrage, Exchange Rate Determination and Forecasting, Introduction to Currency Futures, Currency Options, Forwards and Swaps.

Module 3: Forex Risk Management

8 Sessions

Management of Foreign Exchange Risk – Translation Exposure, Transaction Exposure and Economic Exposure, Hedging – Managing operating exposure

Module 4: Financial Management of Multinational Corporations

14 Sessions

Foreign Direct Investment, Cost of Capital and Capital Structure of Multinational Firms, Multinational Capital Budgeting, Multinational Working Capital Management. Control and Performance Evaluation of Multinational Companies.

Module 5: International Financing

10 Sessions

The international Financing Decision, International Equity Financing, Evaluating Borrowing Options, Funding Avenues in Global Capital Markets – Eurocurrency Markets, Depository Receipts.

Module 6 : International Taxation

4 Sessions

Meaning Tax Principles, Double Taxation relief, Bilateral relief, Unilateral relief, Special provisions relating to avoidance of tax & Tax haven subsidiaries & International offshore financial centers.

REFERENCE BOOKS:

1. Apte, P.G., “International Financial Management”, Tata McGraw Hill Publishing Limited.
2. Vij, Madhu, “International Financial Management”, Excel Books.
3. Sharan, Vyuptakesh, “International Financial Management”, Prentice Hall of India.
4. H.R.Machiraju – International Financial Management HPH
5. Janikiraman :- International Financial Management – Biztantra

6. Shapiro, A., "Multinational Financial Management", Prentice Hall of India.
7. Madura, Jeff, "International Financial Management", Thomson Publications.
8. David K. Eieteman, etal, Multinational Business Finance, Pearson Education.

F5 STRATEGIC FINANCIAL MANAGEMENT

Course Objective

The objective of this course is to introduce the student to the tools and concepts needed to deal effectively with the formulation, Implementation and Monitoring of Strategic Financial decisions of the firm.

Module 1: Strategic Financing Decisions

10 Sessions

Meaning and importance of Strategic Financial Management, Scope and Constituents of Strategic Financial Management, Financial Planning, Capital Allocation and Corporate Strategy, Capital Structure and Firm Value, Dividend Policy and Firm value – Stock vis-à-vis Cash Dividends, Strategic Cost Management – Activity Based Costing, Target Costing, Life Cycle Costing.

Module 2: Corporate Valuation

10 Sessions

Meaning and approaches to Corporate Valuation – Adjusted Book Value Approach, Stock and Debt Approach, Comparable Companies Approach, Discounted Cash Flow Approach – Concept of Free Cash Flow to the Firm, Two and Three Stage Valuation Models. Valuation of Physical Assets, Valuation of Intangible Assets – Brand Equity and Human Resources.

Module 3: Value Metrics

15 Sessions

Shareholder Value Creation – Traditional and Modern Approaches – Value Drivers. Approaches to Value Based Management – Marakon Approach, Alcar Approach, Mc Kinsey Approach, EVA Approach, BCG HOLT Approach. Metrics for Measurement of Performance – EPS, ROI, EBIT, EBITDA, RONA, ROCE, TSR, TBR, MVA, CVA, CFROI – Concept of Economic Depreciation. Executive Compensation and Value Creation. Employee Stock Option Plan. Balanced Scorecard.

Module 4: Corporate Restructuring

5 Sessions

Meaning and forms of corporate Restructuring – Spin off, Split off, Split up, Leveraged Buyout, Divestiture and other forms of corporate Restructuring .

Module 5 : Mergers & Acquisitions

10 Sessions

Corporate Restructuring – Meaning and Forms. Mergers and acquisitions – Definition, Types, Motives for Merger or Acquisition, Steps involved in Merger, Mechanics of Merger – Legal, Accounting and Tax, Valuation for Mergers and Acquisitions, Financing of Merger and settlement – Exchange Ratio, Stock Vs. Cash Payments, Takeovers, Defensive Tactics of Takeovers and disinvestment of PSU's.

Module 6: Challenges in Strategic Financial Management

10 Sessions

Financial Management in Knowledge Intensive Companies and Public Sector Companies, Financial Management in Sick Units, Financial Innovations and Financial Engineering – Overview, Scope, Tools of Financial Engineering, Financial Engineering versus Financial Analysis.

REFERENCE BOOKS:

1. Chandra, Prasanna, "Financial Management", Tata McGraw Hill Publishing Limited.
2. Grinblatt, Mark and Titman, Sheridan, "Financial Markets and Corporate Strategy", Tata McGraw Hill.
3. Sudhindra Bhat "Financial Management" Excel Books
4. R.M.Srivastava :- Financial Management and Policy – HPH
5. Jakhotiya, G.P., "Strategic Financial Management", Vikas Publishing House Private Limited.
6. Vedpuriswar, A.V, "Strategic Financial Management – Achieving Sustainable Competitive Advantage", Vision Books.
7. Allen; Introduction To Strategic Financial Management
8. Swamy Parthasastri : - Corporate Governance ,Biztantra
9. Grundy & Scholes; Exploring Strategic Financial Management; Prentice Hall
10. Weston, Mergers, Restructuring & Corporate Control, PHI

F6 PROJECTS - ANALYSIS AND IMPLEMENTATION

Course Objective

- *To make the student understand the basic concept of project finance*
- *Provide students with an analytical and conceptual framework to evaluate capital investment proposals.*
- *To familiarize students with the various management techniques in implementing the project to its successful completion.*

CHAPTER : 1 PROJECT PLANNING

10 Sessions

Concept of a project, categories of projects, Project life cycle phases, Generation and screening of project ideas, Project appraisal techniques, demand analysis, Technical analysis, Economic analysis, formulation of detailed project reports.

CHAPTER 2 : PROJECT ESTIMATION AND SELECTION

10 Sessions

Preparation of cost estimates, finalisation of project implementation schedule, Investment criteria, PBP, ARR, NPV, PI, IRR, MIRR, cost of capital, capital rationing. Fixing the zero-date

CHAPTER 3: RISK MANAGEMENT IN CAPITAL BUDGETING:

15 Sessions

Sources, Measures and perspectives of risk, portfolio related risk measures, Mean-variable, portfolio construction, capital Asset pricing Model, special techniques of risk analysis – sensitivity analysis, scenario analysis, break even analysis, Hill Model, simulation analysis, standard deviation in measurement of risk, co-efficient variation optimistic –permitted estimates, certainly Equivalent Approach, Decision Tree analysis Managing risk, project selection under risk.

CHAPTER 4: PROJECT FINANCING

10 Sessions

Capital structure, sources of finance Margin money, promoters contribution, consortium lending and local syndication by banks, financing through markets and public issues, Term loans and debentures, Raising venture capital.

CHAPTER 5: PROJECT IMPLEMENTATION AND CONTROL

10 Sessions

Organizing human resources and contracting, organizing systems and procedure for project implementation, working of systems, Design of systems, project work system design, work breakdown structure, project execution plan, project control system, project diary, project control –scope/progress control, performance control, schedule control and cost control.

CHAPTER 6: PROJECT REVIEW & ADMINISTRATIVE ASPECTS 5 SESSIONS

Control of In-Program projects, post completion audits, Abandonment Analysis Administrative aspects of Capital Budgeting, Agency Problem, Evaluating Capital Budgeting systems of an organization.

REFERENCE BOOKS:

1. Prasanna Chandra, Projects Planning Analysis selection, financing, Implementation, Tata McGraw Hill
2. S.Choudhury – Project Management Tata McGraw Hill publishing Co., Ltd.,
3. Vasanth Desai, Project Management – HPH
4. Ravi.M.Kishore – Financial Management – Taxman Publications
5. Gopalan, Project Management, John Wiley

H5 - KNOWLEDGE MANAGEMENT AND LEARNING ORGANIZATION

MODULE 1 THE PARADIGM OF LEARNING ORGANIZATIONS

The paradigm of learning organizations, lessons in learning and creativity, learning organizations – paradigm of strategy and management, life long creates trails of life long creators, model of life long creativity, mastering creative problems, solving, models of creative problems solving, model of creative intelligence, convergent thinking, acquiring a creative persona, techniques of creative problems solving and creativity.

MODULE 2 TECHNIQUES OF CREATIVE PROBLEM SOLVING

Techniques of creativity, problem decomposition, information search, breaking stereotyped response, unblocking, mutual stimulation, imaging, fusioning, ideating, extermisation and dialectical, brainstorming, the when of creativity techniques – attributing changing and morphological analysis.

MODULE 3 BUILDING A LEARNING ORGANIZATION

What is learning organizations – nature of learning enterprises, skills needed by learning organizations, three phases of learning, learning implies unlearning, adaptive and generative learning, building a learning organization, knowledge intensive organization.

MODULE 4: ISSUES, THEMES AND THE ROLE OF INFORMATION TECHNOLOGY ON LEARNING ORGANIZATIONS.

Core issues and themes is building learning enterprises, vision and strategy, nature of the organization structure, an infrastructure for knowledge management, role of information technology in knowledge management, information technology and knowledge approaches.

MODULE 5 TECHNIQUES METHODS AND APPROACHES TO LEARNING ORGANIZATIONS.

Learning companies fostering knowledge and learning, a brief overview of some techniques, methods and approaches, learning organizations and management of change – activities and case studies.

MODULE 6, KNOWLEDGE MANAGEMENT SYSTEM

Introduction to knowledge management, knowledge management and knowledge management systems, drivers of knowledge, tacit and explicit knowledge, knowledge management is virtual organizations, implementing knowledge management solutions, knowledge management system on learning organization, knowledge management systems – issues, challenges and benefits.

H6 - INTERNATIONAL HUMAN RESOURCES MANAGEMENT

MODULE 1. INTERNATIONAL H.R.M

Difference between Domestic HRM and IHRM, Managing International HR activities- HR planning, Recruitment & Selection, Training & Development, Performance management, Remuneration, Repatriation & employee relations. Socio-Political Economic System – U.S, U.K, Japan and India – a comparative analysis.

MODULE 2. INTERNATIONAL RECRUITMENT AND SELECTION

Approaches – Ethnocentric, Polycentric, Geocentric, Regiocentric. Selection: Factors in Expatriate selection – Technical ability, Cross-cultural suitability, Family requirements, MNE requirements.

MODULE 3. HR INFORMATION SYSTEM

Meaning, Need, Advantages and uses. Designing of HRIS, Computerized HRIS, Limitation of HRIS. Computerized skill inventories, Global Talent Search.

MODULE 4. MANAGING HR IN VIRTUAL ORGANISATION

Meaning, Types of virtual organization, Difference between traditional & virtual organizations, Advantages and disadvantages of virtual organizations, Features of virtual organization, Managing HR in virtual organization.

MODULE 5 GLOBALISATION & HRM

Impact of globalization on Employment, HR Development, wage & benefits, Trade unions, Collective bargaining, Participative management & Quality circles. Ethical issues in HR, Changing environment of HRM - Internal and External factors. Internal factors – Human Resource of Country, changing demands of employers, employees organization. External factors – Change in Technology, Legal and Government, Customer Social factors, Economic and Political factors and talent management.

MODULE 6 TQM & HR MANAGEMENT

Principles of TQM, Methods of Total Quality Management, HRM & TQM, HR strategy to TQM.

REFERENCE

1. N Sengupta & Mousumi S Bhattacharya – International Human Resource Management – Excel Books
2. S.Jayashree – What Every MBA Should Know About HRM - HPH

S4 : E – COMMERCE TECHNOLOGY AND MANAGEMENT

MODULE 1: FUNDAMENTAL OF E-COMMERCE

Introduction to E-Commerce, Types of E-Commerce: B2B, B2C, C2C, G2G, G2E, G2C, E-Business Models & Markets, Techniques and Tools, E-Commerce Providers and Vendors.

MODULE 2: BUSINESS APPLICATIONS IN E-COMMERCE

Retailing in E-commerce – market research on internet customers – e-commerce for service sector – Advertising in e-commerce – B2B ecommerce. Supply Chain Management: E – logistics, Supply Chain Portal, Supply Chain Planning Tools (SCP Tools), Supply Chain Execution (SCE), SCE - Framework, Internet's effect on Supply Chain Power and E – Marketing.

MODULE 3: E-COMMERCE INFRASTRUCTURE

Intranet, Internet & Extranet – Structure, Architecture, Applications & Business Models.

MODULE 4: E-COMMERCE PAYMENTS AND SECURITY

E-Payments and Protocols-Security schemes against internet fraud. Principles of e-fund transfer, credit and debit card usage, E – Cheque, E – Cash, E – Payment Threats & Protections.

MODULE 5: LEGAL AND PRIVACY ISSUES IN E-COMMERCE

E-Commerce Issues & Opportunities in Implementation and Role of Government - Commercial Issues, Infrastructure Issues, Social and cultural issues, Role of Govt. and Policy Recommendations and Emerging trends in E- Commerce.

TEXT BOOKS

1. Efraim Turban et al., 'Electronic Commerce – A managerial perspective', Pearson Education Asia, 2002.
2. Kalakota et al, 'Frontiers of Electronic Commerce', Addison Wesley, 2001.
3. Greenstein Firsman, 'Electronic Commerce', Tata McGraw Hill, 1999.
4. C.S.V. Murthy – E.Commerce-HPH
5. Nabil Adam et al, 'Electronic Commerce – Technical, Business and Legal Issues'. Prentice Hall. 1998.
6. C.S.Rayudu – E Commerce, E Business-HPH

S5 :SYSTEM ANALYSIS & DESIGN

Objectives: The objective of the course is to familiarize the students with the various Concepts of system analysis, design and planning.

MODULE I

System Concepts and Information Systems Environment, System Development life Cycle, Role of System Analyst.

MODULE II

System Planning and initial Investigation, Information Gathering, Tools of Structured: DFD, DD, Decision Tree, Decision Table, Structured English, Pseudo code, Analysis, Feasibility Study, Cost/Benefit Analysis.

Module III

Process and Stages of System Design, Input / Output and Forms Design, File Organisation and Database Design.

Module IV

System Testing & Quality Assurance, Implementation and Software Maintenance, Hardware and Software Selection and Computer Contract, Project Scheduling and Software, Security, Disaster/ Recovery, and Ethics in System Development.

Text Books:

1. Elias M Awad, - System Analysis & Design, Galgotia Publication
2. Hopper, George, Valacich, Panigrahi, - Modern System Analysis and Design, Pearson Education.
1. James A Senn, - Analysis & Design of Information Systems, Tata McGraw Hill
2. Rajaraman, Analysis & Design of Information Systems, PHI.
3. Whitten, Bentley, Dittman, - System Analysis & Design Methods, TMH

S6 :ENTERPRISE RESOURCE PLANNING AND BUSINESS PROCESS RE-ENGINEERING

Objectives: This paper will orient students to understand that business processes can be integrated in a seamless chain.

UNIT – I

Introduction to Process Concept, Primary value chain concept, Process Activities, product complexities, Reengineering current situation, necessary to re-invent organization. Continuing the mass production concept, variation on the Greenfield approach. The impact of accounting system on decision seeking outside help, BPR success determination, Industry consolidation. The value of BPR; BPR experiences.

UNIT – II

Analyze process, establish process matrix, process matrix vary by process type. Applying analysis tool and methods, accounting of process, determining the cost of quality, process analysis sample, first, further and by example. Activity analysis, span of control, process representation, consistent semantic, semantic network process representation and modeling culture change.

UNIT – III

ERP - Introduction, integrated management information, seamless integration, supply chain management, resource management, scope and benefits, evolution, modern enterprise, business engineering and ERP.

UNIT – IV

Business modeling - Building, extended ERP, business modeling in practice, ERP implementation, role of consultants, vendors and users, customization, precautions, guidelines. Post implementation options and methodology.

UNIT – V

ERP - Competitive advantage, strategy, marketing of ERP, ERP Domain, MFGIPRO; IFSI Avalon, Baan IV; SAP, SAP R/3, Application; ERP III.

REFERENCE BOOKS:

1. Ravi Anupindi, Suni Chopra, "Managing Business Process Flows", Pearson Education
2. Garg, V. K. and Veket Krishna N. K., "ERP Concepts and Practice", PHI Publication.
3. D.S. Linthicum, "Enterprise Application Integration", Pearson Education
4. Altekar, Enterprise Resource Planning, PHI
5. ERP – Alexis Leon, Leon Publishers
6. Supply Chain Management based on SAP Systems, G. Knolmayer, P. Mertens and A. Zeir, Springer International Edition.
7. Introduction to SAP, an Overview of SD, MM, PP,FI/CO Modules of SAP
8. ERP, Vinod Kumar Garg and N.K. Venkitakrishnan, PHI



SURANA COLLEGE
DEPARTMENT OF POSTGRADUATE PSYCHOLOGY

Annexure -XVII
Change of Syllabus and Present Syllabus

Change of Syllabus

- The M.Sc Psychology Course is affiliated to Bangalore University. Hence the syllabus of Bangalore University is followed. The revised syllabus of 2005 is followed.
- Dr. Y.T Balakrishna Acharya, Professor of Psychology is the Board of Studies member of Bangalore University has suggested for revision of the syllabus.

Details of Present Syllabus of M.Sc Psychology Course

Details of the Papers in Each Semester

First Semester

Basic Cognitive Processes-I
Biological Processes-I
Psychometry and Research Methods
Computer Applications in Psychology
Experiments on Perception & Psychophysics
Experiments on Memory & Learning

Second Semester

Higher Cognitive Processes- II
Biological Processes –II
Experimental Designs and Psychological Statistics
Theories of Personality
Experiments on Thinking
Project/Field Work

Third Semester

Theories of Learning
Life Span Development

PG DEPARTMENT OF PSYCHOLOGY



**"Community Development Through Excellent Higher
Education, Service & Research Systems"**



Specialization 1: Clinical Psychology

Psychological assesment-I
Behaviour Dysfunction
Assesment of Cognition & Intervention Techniques
Screening & Test administration for children
Internship Training at Clinical settings

Specialization 2: Industrial/ Organizational Psychology

Industrial Psychology-I
Organizational Structure & Organizational Development-I
Assesment of Intelligence & Aptitudes
Assesment of Personality & Interests
Internship training at Industrial/ Organizational settings

Specialization 3: Child Psychology

Child development
Child assesment
Assessment of Cognition
Assessment of Personality and Skill Training
Internship Training at Clinical settings

Fourth Semester

Indian & Transpersonal Psychology
Community Psychology

Specialization 1: Clinical Psychology

Psychological assesment-II
Psychological Interventions
Assesment of Personality & Intervention Techniques
Field work/Project

Specialization 2: Industrial/ Organizational Psychology

Industrial Psychology-II
Organizational Structure & Organizational Development-II
Screening & assesment
Field work/Project

Specialization 3: Child Psychology

Child Psychopathology
Child Intervention Procedures
Assessment / Screening and Intervention
Field work/Project





Present Syllabus of M.Sc psychology Course

I Semester

101 BASIC COGNITIVE PROCESSES

Objectives

To learn about the mental processes involved in the acquisition, storage, retrieval and use of knowledge. The three main perspective of cognitive psychology that now defines the discipline: experimental cognitive psychology: cognitive science with its emphasis on computational cognitive modeling, and cognitive neuropsychology with its focus on cognition following brain damage will be considered. The critical components of the cognitive system including attention, perception and memory, and their application in the more specialized areas of language, categorization, problem solving and creativity will be focused upon. The cognitive approach has wide spread influence on other areas of psychology as well as interdisciplinary areas. Understanding these processes will therefore give the students a holistic view of psychology and help students understand human psychology better.

Unit 1. Cognitive Psychology - An introduction:

History- nature- current status[including cognitive and computational neuroscience]- future trends and issues, Basic concepts in cognitive psychology: Mental representations- codes-medium- characteristics of human information processing: (feature analysis, hierarchical organization, bottom up vs top down processing, parallel vs serial Processing)

Unit 2. Attention:

Theories of attention (bottleneck theories, Schneider and schiffirin's automated vs controlled processing, Treisman's feature integration theory); model of attention- alerting mechanisms, conscious monitoring procedures; automatization of attention, divided attention, selective attention, divided attention, selective attention, sustenance of attention, neurocognition of attention.

Unit 3. Perception:

Introduction- principles of perception in all modalities- vision [brightness, colour, form, location], audition [pitch, intensity, location], somatosensory [touch, pressure, pain, temperature] proprioceptive, visual pattern recognition—(template matching, prototype models, distinctive features models, computational approach); nature and factors affecting visual pattern recognition.

Imagery- characteristics of mental images, cognitive maps

Unit 4. Memory:

Types- Sensory Memory- Iconic memory; Echoic memory: Working Memory, Long Term Memory – determinants, autobiographical memory, mnemonics, Models of memory- (Atkinson-Shiffirin model, levels of processing approach, Tulvin's model. Paralell Distributed processing





approach), Semantic memory- Structure [feature comparison model, network model, exemplar approach, prototype approach], schemas, metamemory.

Unit 5. Consciousness:

History, functions, cognitive psychology and consciousness, consciousness as a scientific construct modern theories of consciousness.





102 BIOLOGICAL PROCESSES - 1

Unit 1. Introduction to biological basis of behavior:

Nature and scope of physiological psychology, Methods of study, Research techniques.

Unit 2. Behaviour genetics:

Nature and scope. Methods of study and research techniques, Genetic principles and mechanism of animal and human behavior, genetic correlates of behavior, eugenics, genetic engineering.

Unit 3. Nueronal functions:

Structure and type of neurons, conduction and transmission. Structural chemical- electrical components of nervous system. Major divisions and functions of nervous system/central, autonomic nervous systems.

Unit 4. Correlates of internal regulatory bodily states:

Body temperature, digestive mechanisms, mechanisms of pain, balance and endocrinal systems.

Unit 5. Mechanism of sensation, perception, and movement:

Structural, chemical, electrical and genetic correlates of vision, audition, olfaction, gestation, and tactile sensation- perceptual process- Motor Functions.





103 PSYCHOMETRY AND RESEARCH METHODS

Objectives: This paper is framed with an objective of introducing measurement techniques, Research methods and Psychological testing.

Unit1. Measurement

Levels of Measurement, Scaling methods, Antecedent of modern testing. Nature, meaning and use of psychological tests. Characteristics of a good psychological test. Ethical issues in use of tests.

Unit 2. Test Construction

Item writing, item validity, item analysis, norms development, meaning of test scores, reliability and validity- types and methods.

Unit 3. Application of tests

Educational, occupational and clinical – counseling applications. Types of tests. Individual tests, tests for special population, group testing, self report and projective testing, Measuring interest and attitudes.

Unit 4. Research Methods

Scientific research, problem, hypotheses, variables, Process of research- planning, sample selection, data collection, analysis, interpretation, and reporting, Sources of bias in research, ethics of research.

Unit 5 Sampling theory

Probability and non probability sample, Sampling techniques and errors of sampling. Methods of data collection. Observation, interview, sociometry, meta analysis, life history, simulation and games.





COMPUTER APPLICATIONS IN PSYCHOLOGY

Objectives:

The objective of this paper is to introduce the students to the basic elements of computer hardware/software and to give an overview of the ways computers are used in psychology. The applications in psychology including document preparation, database management, statistical analysis, laboratory/ experimental control, simulation of behavior and cognitive processes will be focused upon.

Unit 1: Computer Fundamentals: Computer and their evolution- generations, types – (personal, mainframe, mini and super computer). Organization and working of a computer. Flow-charts, Computer architecture fundamentals (definition and their purpose) Internals – CPU, memory, motherboard, disc drives, system bus, plug in cards: Externals – I/O devices. Hardware issues: types of memory – primary (RAM, ROM) and secondary (floppy, hard disc, pen drives, CD, DVD). Various types of operating systems and their applications- Windows and UNIX operating systems. Network peripherals- modem and basic components of a network, internet issues: Advantages of networking and internet, email: Principle of file transfer, chat and remote log in: Internet resources for psychology- ERIC data base, PsychLit, Use of CD- ROMs- PsychINFO, www.pubmed.com / www.sciencedirect.com / www.scholargoogle.com / www.ebsco.org

Unit.2 Applications to the field of Psychology

- a. Experimental/ Laboratory control: Use of Computers in designing experiments, Control of relevant variables (time of exposure, measurement of reaction time, presentation of materials, text/graphic images) recording of data, statistical analysis.
- b. Report writing- Data entry, statistical Analysis – SPSS, writing the report
- c. Cognitive Psychology- GPS, Artificial Intelligence, expert systems, simulation/virtual reality
- d. Clinical/child psychology: Computer mediated psychological testing, virtual psychotherapy, computer assisted counselor training, neuropsychological assessment- MRI, PET, Cognitive retraining, computerized report writing, effects of computer/internet on mental health.
- e. Industrial/organizational: Selection and placement – computer assisted assessment: job analysis and evaluation, computerized performance evaluation
- f. Educational Psychology: eLearning resources, online assessment and evaluation

Practicals:

MS Word – Editing features, reviewing, preparation of reports

MS Excel- data entry

MS Power point – presentation

MS Access – database creation/searching retrieval





Internet: Setting up individual account for email, web browsing – review of literature searching for a document and down loading
SPSS – data entry and basic statistics
SPSS Some parametric and non parametric tests
Atlas TI – qualitative research analysis





105P EXPERIMENTS ON PERCEPTION AND PSYCHOPHYSICS

1. Sustained and focused attention
2. Constancy Phenomena – Size/ Shape/ Colour
3. Depth Perception
4. Gestalt principles of perception
5. Phi Phenomenon
6. Visual Perception test
7. Effect of Unfilled and filled intervals on time perception
8. Subliminal perception
9. Haptic perception
10. Scaling a set of stimuli using paired comparison and rank order
11. DL for length using method of average error
12. Weber's law method of Constant stimuli
13. Absolute limen for sensory stimuli
14. Signal detection

106 MEMORY AND LEARNING

1. Serial position curve
2. Levels of processing
3. semantic memory
4. Effect of schema on memory
5. priming
6. skill learning – mirror drawing/mazes
7. Verbal Working memory – N Back task
8. Visiospatial Working memory
9. Massed Vs Spaced learning
10. Conditioned reflex
11. Schedules of reinforcement
12. Paired associate learning using peterson's learning apparatus
13. Yerks multiple choice
14. Insightful learning
15. Reys auditory Verbal learning test

Note: Any 9 experiments in each paper will be selected every year by the Departmental council, with atleast four in each area





II Semester

201- HIGHER COGNITIVE PROCESSES

Unit 1: Categorization- nature; theories, natural categories. Problem solving- definition, process; strategies and heuristics, factors influencing problem solving; Creativity – nature; creative process; characteristics of creative individuals; assessment of creative individuals; assessment of creativity, factors affecting creativity. 12 hours

Unit 2: Reasoning and Decision Making: Reasoning – nature, conditional reasoning, syllogistic reasoning; Decision making – process; heuristics (representative heuristic- availability heuristic- anchoring and adjustment- analogy- simulation); framing effect. 12 hours

Unit 3: Language: Comprehension- Understanding spoken language- process- speech perception, structure of human language- theory of constituent processing, Chomsky's transformational grammar, factors affecting listening; Reading- Process- theories of word recognition; factors affecting reading comprehension. 12 hours

Unit 4: Language production- Speaking- selecting content of speech, speech errors, gestures, social context; Writing- cognitive task involved in writing; comprehension of speaking and writing; Bilingualism- advantages and disadvantages, code switching. 12 hours

Unit 5a: Cognitive Development: Theories: Piaget's; Vygotsky; information processing perspective- development of perception, attention, memory, language, metacognition.
5b: Social perception and social cognition 12 hours





202 BIOLOGICAL PROCESS II

Unit 1. Psychophysiology of Higher mental functions: structural, chemical, electrical and genetic correlates of learning, memory and intelligence.

12 hours

Unit 2. Psychophysiology of executive functions – Structural, chemical, electrical and genetic correlates of emotions- motives and drives.

12 hours

Unit 3. Psychophysiology of affect and volition- Structural, chemical, electrical and genetic correlates of emotions- motives and drives.

12 hours

Unit 4. Psychophysiology of personality and consciousness- temperamental dimensions, personality typology- levels and states of consciousness.

12 hours

Unit 5: Psychophysiology of psychological dysfunctions – Structural, chemical, electrical and genetic correlates of organic, psychotic and neurotic disorders.

12 hours





203 EXPERIMENTAL AND PSYCHOLOGICAL STATISTICS

Objectives: This paper is framed with an objective of introducing research designs and the statistical methods for analysis of data.

Unit 1. Research designs. Meaning, principles and purpose of research design. Adequate and inadequate designs. Between group and within-group designs, factorial Designs, single case design.

Unit 2: Experimental and non-experimental research. Case study, survey, field study, ex-post facto studies. Qualitative research methodology.

Unit 3: Definition and nature of statistics. Descriptive statistics. Measures of central tendency and variability. Probability, Principles, characteristics and properties of normal probability curve.

Unit 4: Levels of significance, Tests of significance- t, ANOVA, ANCOVA and MANOVA- Parametric and non- parametric tests- differences- Chi square and median test.

Unit 5: Concept of correlation- types(Pearson's product moment correlation , Spearman Rho, Biserial and Point biserial) and uses. Regression, multiple regression. Factor and discriminant analysis- techniques, interpretation and application.





204: THEORIES OF PERSONALITY

Unit 1. Nature of personality- background and methodology- meaning, historical foundations, need for personality theory, key concepts, major components of personality theories, issues, dimensions for evaluation of personality- current status of research on personality.

Unit 2. Psychoanalytical theory- Freud's view on personality, Neo Freudian approaches – Adler, Jung, Horney, Sullivan, Rank- current status of research and applications

Unit 3. Behaviorist theories- Watson, Bandura, Wolpe, Miller, Dollard- current status of research and applications.

Unit 4. Humanistic- Phenomenological and Interpersonal approaches, Rogers, Kelly, Goldstein, Maslow, Berne- current status of research and applications.

Unit 5. Field and Factor Analytical Theory: Levin, Guilford, Eysenck, Cattell- current status of research and applications.





THINKING (Practical)

1. Concept formation
2. Categorization
3. Effect of set on problem solving- formation of set, shift of set
4. Tower of Hanoi- problem solving
5. Mazes
6. Yerkes multiple choice
7. Cognitive style – Embedded Figures Test
8. Syllogistic reasoning
9. Creativity
10. Cryptarithmic
11. Decision making
12. Wisconsin Card Sorting Test

PROJECT WORK

1. Hemispherical correlates of cognitive abilities
2. Biological processes
3. Perception
4. Arousal
5. Motivation
6. Decision making
7. Working memory
8. Judgment of Facial expressions
9. Problem solving
10. Language processing
11. Reasoning





III Semester

301 THEORIES OF LEARNING

Unit 1: Nature of learning theories, need for a theory, variables, laws of learning, problems and issues, determinants of learning, applications of learning research.

Unit 2: S-R theories: Pavlov, Guthrie, Thorndike, Harlow, Skinner, current status of research and applications

Unit 3: Drive reduction theories: Hull, Mowrer, Spence, Miller, current status of research and applications

Unit 4: Cognitive theories: Tolman, Gestalt theories-Kohler, Koffka, current status of research and applications

Unit 5: Mathematical models: simulated learning models-human learning models-current status of research and applications





302 LIFE SPAN DEVELOPMENT

Unit-1

Defining life span development, science of life span development. Methods and developmental research. Theories of human development- brief description of Freudian, cognitive (Piaget), Contextual (Vygotsky, Bronfenbrenner) theories, Genetics, environment and development. Pre-natal and perinatal environment, hazards, risks. Infancy-principles of growth, physical and development.

Unit-2

Physical development across the life span and the psychological implications: Growth during childhood, spurt during puberty, physical growth and sexual maturity, appearance and structure during adulthood, menopause and male climacteric, slowing down disease, disability and death.

Unit-3

Cognition: Development during adolescence, growth beyond formal operational stage, aging and cognitive skills, intelligence, creativity, learning and memory across life span. Language and moral development, Stages in language development, language development across the life span, theories of moral development, Changes in moral reasoning.

Unit-4

Social and emotional development. Attachment, love and marriage, intimacy, sexuality, parenthood, parent-child conflicts, parenting styles, family life cycle, family relationships in later years, grandparenting, self identity, gender identity and personality across the life span.

Unit-5

Education, school and scholastic achievement, adult learning, life long education. Work, preparation for work, theories of career development, balancing work and marriage, work in middle age-generativity, retirement in old age, healthy adjustment.





Paper 303C INDUSTRIAL PSYCHOLOGY 1

Objectives: The syllabus is designed to equip students with traditional role of a psychologist in organization with emphasis on the various personnel functions, as well as recent trends.

Unit 1: (a) Scope, historical development and current status, Industrial psychology in India.

(b) Personnel selection – Selection Models – Techniques of Selection – testing, interview, reference letters, and other selection devices, strategies for retention.

Unit 2: Psychological processes at work: Importance of Perception, perceptual organization Social perception. Impression Management

Personality and Attitudes: Antecedents, implications of personality and attitude on work performance. Individual difference, Self efficiency, Emotional Intelligence, Optimism

Unit 3: Motivation: Concept of work motivation, content and process theories of work motivation, contemporary theories of work motivation, motivating performance through Job design, goal setting, socio- technical system, quality of work life.

Unit 4: Learning – Principles of learning in the context of organization, reinforcement, reward, Punishment, behavior management and OB modifications.

Unit 5: Communication Skills: Types of communication – Verbal, non verbal, interpersonal, formal and informal communications, personal barriers in interactive communication, communication media and technology, communication across culture





304 C ORGANIZATIONAL STRUCTURE AND ORGANIZATIONAL DEVELOPMENT -1

Objectives: The course is designed to provide information regarding the structure of organizations and the nature of organizational behavior to the student. The course equips the student to deal with the problems related to human relations and human activities in organizations.

Unit 1: Foundations of Organizational Behavior: Introduction to Organizational Behaviour – Historical Background, The Hawthorne Studies – Defining Organizational Behaviour, theoretical framework, Organizational behavior model. Today's organizations [Information technology, Total Quality Management, Learning organization. Contemporary challenges- diversity and ethics]

Unit 2: Macro dynamics of OB- Groups Dynamics: The nature of groups, the dynamics of formal and informal work groups, Teams, Teams in modern workplace.

Unit 3: Conflict: Interactive conflict and negotiation Skill, Intra individual conflict interpersonal conflict- Inter group behavior and Conflict- organizational conflict, negotiation skills

Unit 4: Stress: Causes, effect and coping strategies. The meaning of stress- The causes of stress. The effects of Stress- Coping strategies for stress

Unit 5: Leadership and Power: Background and process: Meaning of leadership, historical background, Traditional and modern theories. Leadership styles, activities and skills. The role and activities of leadership- leader skills, Power and politics, Meaning of power and political implication of power





305 P ASSESSMENTS OF INTELLIGENCE AND APTITUDES

PART A - ADMINISTRATION

1. Assessment of intelligence using the Raven's Standard Progressive Matrices
2. Assessment of intelligence using Cattell's Culture Fair Test
3. Assessment of Performance Quotient using WAPIS
4. Assessment of Verbal Intelligence using the General Mental Ability Test
5. Assessment of aptitudes using the Differential Aptitude Test
6. Assessment of Mechanical Comprehension using the Mechanical Comprehension Test
7. Administration of Scientific Knowledge and Aptitude Test
8. Assessment of clerical aptitude using the Minnesota Clerical Aptitude Test
9. Assessment of the stenographic Aptitude Test
10. Administration of the General Aptitude Test Battery
11. Administration of the Minnesota paper form boards

PART B – DEMONSTRATION

1. Collins and Drever battery of intelligence test
2. Army Alpha and Beta
3. Otis scale
4. Assessment of manual dexterities-Turning and placing: Steadiness tester: Eye-hand coordination
5. Tweezer and finger dexterity: Two hand coordination: Purdue pegboard: Hand tool dexterity





306 P ASSESSMENT OF PERSONALITY AND INTERESTS

1. Assessment of personality traits using the 16 PF questionnaire
2. Assessment of personality dimensions using Eysenck's Personality Inventory
3. Assessment of personality using the Kundu's Neurotic Personality Inventory
4. Assessment of adjustment using Bell's Adjustment Inventory
5. Assessment of personality using Cornell's Medical Index
6. Administration of FIRO-B to assess Interpersonal Relationships
7. Assessment of personality using EPPS
8. Administration of the Motivational Analysis test
9. Assessment of interest using Chatterji's non-language preference record
10. Administration of Thurston's interest schedule
11. Administration of Strong's vocational interest blank
12. Administration of Neo-5 factors of personality

Part B: Demonstration

I Management games: Johari window: fish bowl: role play: encounter: brainstorming: stroking: group discussions: win as much as you can (co-operative vs competitive behavior)

II areas: assertiveness: stress management: time management: conflict resolution: decision making: communication





IV Semester

401 INDIAN AND TRANSPERSONAL PSYCHOLOGY

Unit 1: Definitions, nature, differentiation of concepts; indigenous, Indian, transpersonal psychology, relationship between culture and psychology, emergence of indigenous and non western perspectives to psychology.

Unit2: Major schools of Indian psychology, world views and methods of knowing in Upanishads, sankhya, dvaitha, and advaitha schools, basic methods of study, current research in Indian psychology.

Unit3: Self and consciousness, viewpoints of Upanishads, baghvatgeetha, Buddhism and Jainism, and other Indian schools of thought.

Unit4: Health -well being- human development: Indian approaches to health and well being, yoga, ayurveda, goals of life- concept of purusharthas, personality development- concept of ashramas.

Unit5: Transpersonal approaches- transpersonal phenomenon and consciousness- contribution of William James, Jung, Christian mystical tradition, Hinduism, Buddhism, Jainism in understanding transpersonal phenomenon.





402 COMMUNITY PSYCHOLOGY

Unit 1

Introduction: definition of community psychology, factors underlying emergence of community psychology, principles of community psychology. Concept of prevention. Theory and research in community psychology-ecology, epidemiology, general systems theory, evaluation research.

Unit-2

Concept of community mental health, medical model vs CMH model, comprehensive community mental health centers, development and functions. Major techniques of CMH- crisis intervention, consultation, mental health education and uses of Non professionals. Community mental health movement in India- Development and current status

Unit-3

Aggression in the community- Definition, Nature, theories of aggressive behavior. Control and prevention of aggression

Violence definition, different types of violence- domestic and group violence, effect. Control and Prevention. Role of community psychologists in control of such behavior.

Unit-4a: Crime and delinquency, definition, types, causes- prevention of crime, rehabilitation of criminals, role of psychologists

4b: problem of alcoholism, definition, types, theories of alcoholism, effects, methods of treatment, prevention and rehabilitation

Unit 5a: problem of unemployment: defining unemployment, causes and types, effects of unemployment, role of psychologists in solving the problem.

5b: poverty and deprivation: definition, types, causes. Psychological studies of effects of poverty and deprivation, poverty alleviation programmes.



403 B INDUSTRIAL PSYCHOLOGY -2

Objectives: The syllabus is designed to equip students with contemporary role of a psychologist in organization with emphasis on the various personnel functions, as well as recent trends.

Unit 1: Training – Systems approach to training, Different methods of training- human relations training, sensitivity training, stimulated training, vestibule training, sensitivity training, assessment centers, organizational training laboratory, determinants of training, effectiveness, measurement and evaluation of effectiveness.

Unit 2: Performance Appraisal- Need, objectives, techniques and methods of evaluation. ISO, Six Sigma, quality circles

Unit 3: Work environment: Physical and psychological environments, Man Machine Integration, Impact of environment on job performance and on the individual, Effect of environmental factors on performance, Person, fatigue, Person – environment fit theory, determinants of ideal work environment, job satisfaction

Unit 4: Application of psychological principles to marketing, consumer behavior and advertisement

Unit 5: Behavioral issues- Absenteeism, alcoholism, attrition., gender differences, accidents, intervention techniques for handling behavioral issues, compensation management.





404 B ORGANIZATIONAL STRUCTURE AND ORGANIZATIONAL DEVELOPMENT-2

Objectives: The course equips the student to deal with the problems related to human relations and human activities in organizations.

Unit 1: Macro perspective of organizational behavior- Background of the role of communication, Communication technology: Nonverbal communication – Downward communication –, upward communication.

Unit 2: Decision making – Nature of decision making, Behavioral decision making, participate decision making techniques, creativity and group decision making

Unit 3: Organization Theory and Design, classical organization theory, modifications of bureaucratic structuring, modern organization theory, modern organizational designs

Unit 4: Organizational Culture: nature of Organizational Culture – Creating and maintaining culture, the impact of culture on international organizational behavior, global communication, motivation across cultures, managerial leadership across cultures.

Unit 5: Organizational change and development, The changes facing organizations – Managing Change and Organizational Development – The future of Organizational Behaviour.





405 P SCREENING AND ASSESSMENT

Part a – administration

1. Assessment of job stress
2. Assessment of burn out
3. Assessment of job satisfaction
4. Performance evaluation/ how to supervise
5. Selection interviews
6. Performance appraisal
7. Assessing work motivation
8. Assessing values using Rokeach's scale
9. Type a behavior
10. Assessment of quality work life

Part b-

1. Job analysis-semi skilled job
2. Job analysis-skilled job
3. Job analysis-professional job
4. Case studies- communication
5. Case studies- motivation
6. Case studies- inter personal relations
7. Case studies- leadership style

