

# **GURU NANAK COLLEGE**

## **(AUTONOMOUS)**

**VELACHERY ROAD, CHENNAI – 600042**

**(Re-accredited at 'A-Grade' by NAAC)**

**Affiliated to University of Madras**



## **B.Com. COMPUTER APPLICATIONS**

**(SEMESTER PATTERN WITH CHOICE BASED CREDIT SYSTEM)**

## **SYLLABUS**

**(For the candidates admitted for the Academic year 2022-2023 and there after)**

## PREAMBLE

B.Com (Computer Applications) degree equips a student with fundamentals and concepts on Accountancy, Information Technology, Business Administration, Finance, Economics and Industrial Policies. A student who has completed a BCom Computer Applications has **career opportunities in both the Public and Private sectors** where they can work as Business Consultants, Auditors, Business Analysts, App Developers, Computer Programmers. This degree enables students to become more skilled and productive workers in an increasingly competitive industry. In fact, the course has been highly successful. As the demand for such graduates is high, the course is attracting more students. With an impressive job market and a well-shaped career, the course is a great choice for students who want to work in a tech-oriented field. To become a **B.Com computer application** student, you must have studied Commerce throughout your tenth and twelfth years. If you are under 25, you can opt for the BCom Computer Applications course. You should also have a strong interest in mathematics and science. Applicants should have excellent computer skills and have a thorough knowledge of computer hardware and software. A **Bachelor of Commerce in Computer Applications** degree opens many doors. After graduation, BCom graduates can work in a variety of industries, including marketing, e-commerce, teaching, and even the stock market. With their strong understanding of technology and business, BCom graduates can also get jobs in the finance, accounting, and operations sectors. As a result, BCom graduates are well-equipped to enter various industries and gain a competitive edge in the marketplace.

The future scope of **B. Com Computer Applications** is promising. The course blends the fields of commerce and computer science. The students are trained to become software developers and have a good knowledge of the basics of both the subjects. Moreover, they are given an intellectual foundation that can lead to other opportunities. After graduating, the BCom Computer Applications graduates can look forward to a bright future in various fields.

The course helps students to understand the basics of commerce. It helps them to understand the different aspects of computer applications and the ways to apply them in various business operations. Moreover, it makes them familiar with the process and mechanisms of conducting business transactions through electronic media. Apart from these, the course helps the students to develop analytical skills. As the demand for efficient computer systems in business grows, the job outlook for B. Com graduates in this field is incredibly promising. It is possible to enter top IT companies and earn lucrative salaries. In addition, if you're passionate about computers and commerce, this course will help you learn to program computers and understand how to use them to make the best financial decisions for your business.

In the business world, graduates can work in the IT sector or in the educational field. Computer analysts help enterprises and companies to improve their processes. The degree also enables them to work as mobile app developers. This can open up a wide range of career opportunities. However, it is important to keep in mind that there are many other options as well. The students can go on to pursue higher education to become software developers, software engineers, or IT specialists.

## **LEARNING OUTCOME BASED CURRICULUM FRAMEWORK**

### **Syllabus (For the Candidates admitted in 2022 - 23 and thereafter)**

#### **VISION**

Transforming life through excellence in **Technical Education** to produce skilled and trained manpower of the highest quality Imbibing traditional cultural values to meet the growing Technological and Socioeconomic needs of our nation and the world at large.

#### **MISSION**

- **World class Education:** Excellence in education, grounded in ethics and critical thinking, for improvement of life.
- Serve the public through the promotion and advancement of Technical Education and vocational Training, establish the procedures for setting and maintaining standards and quality of technical education and Government on the strategic development of the sector:
- Upgrade technical courses to meet the world standard through user friendly course curricula
- Promote quality and innovation in technical education and training sector.
- Anticipate and prepare for the changing environment and the future needs in the pursuits of technological advancements.
- Manage the operations and resources to be effective and fiscally responsible.

### **PROGRAM OUTCOMES**

#### **B.Com. COMPUTER APPLICATIONS**

**PO 1:** Exhibit the elementary knowledge of Business Laws.

**PO 2:** Understand the Economic, Business Environment in the basic tools of Business Analysis.

**PO 3:** Perform various skills of Office Management.

**PO 4:** Acquire professional education and business ethics.

**PO 5:** Develop Basic Computer Technology. Expertise in handling Computer based problem solving techniques.

### **PROGRAMME SPECIFIC OUTCOMES**

#### **B.Com. COMPUTER APPLICATIONS**

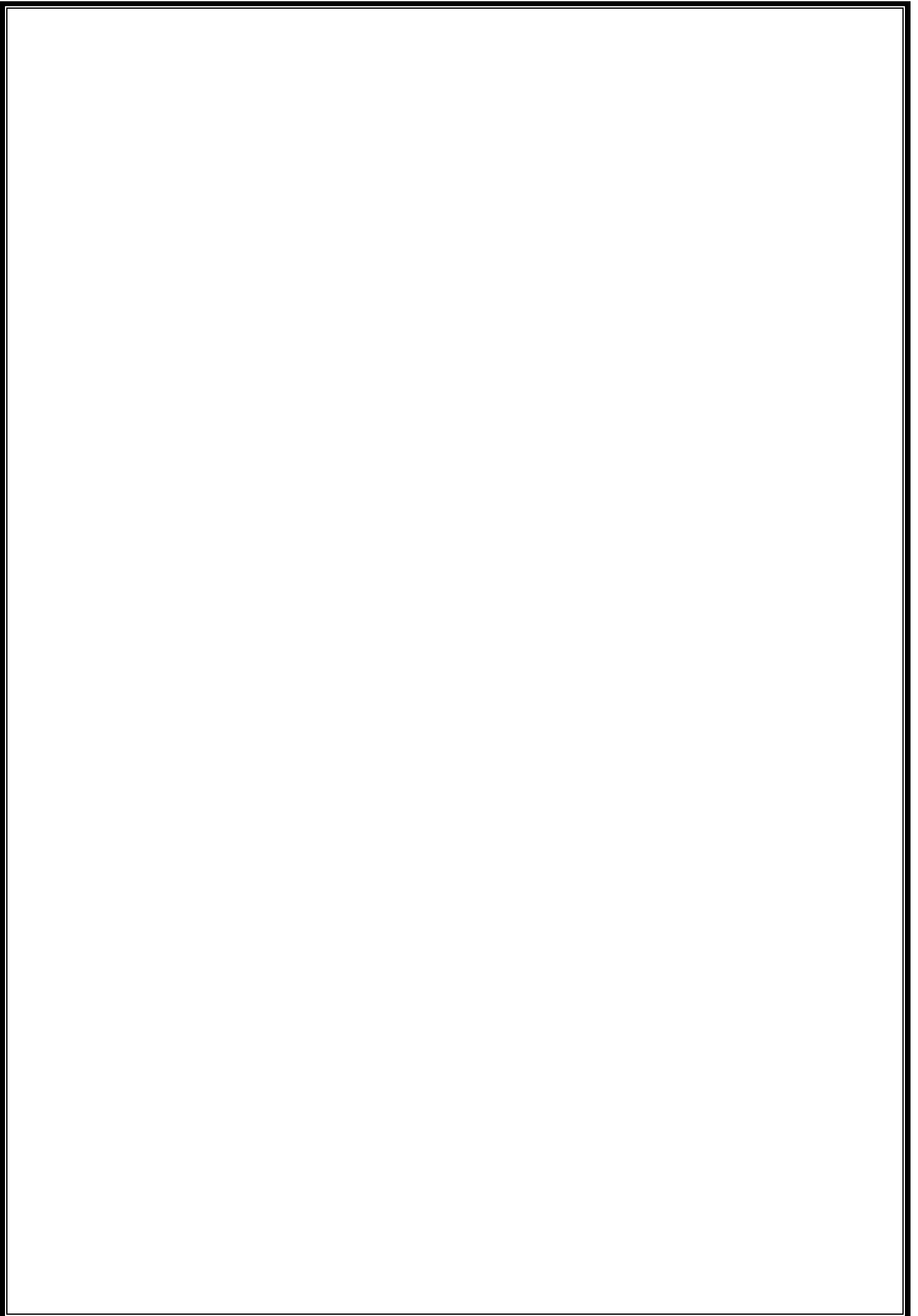
**PSO 1:** Eligible for higher studies such as M. Com, MCA, MBA, ACS, CMA, CA and Employable in Educational institutions and Banking sectors.

**PSO 2:** Embark on new venture and initiatives with critical thinking and desire for more continuous learning focusing of life skills.

**COURSE STRUCTURE**  
**BACHELOR OF COMMERCE - B.Com (C.A)**  
**B. Com (Computer Applications)**

**Details of Course Structure**

Sem	Part I	Part II	Part III			Part IV					Part V	
	Lang	English	Core	Elective	Allied	NME/ Basic Tamil/ Adv. Tamil	Soft Skill	Skill Based Elective	EVS	Value Education	Extension Service	Internship
I	1	1	1+1		1	1		1				
II	1	1	1+1		1	1		1				
III			2+2		1			1				
IV			2+2		1			1	1			
V			2+2	1						1		
VI			2+1	2							1	1
<b>Total No. of Papers</b>	2	2	19	3	4	2	0	4	1	1	1	1
<b>Credit</b>	3	3	4	5	5	2		3	2	2	1	2
<b>Total Credits</b>	<b>6</b>	<b>6</b>	<b>76</b>	<b>15</b>	<b>20</b>	<b>4</b>	<b>0</b>	<b>12</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>
<b>Total Credits</b>												<b>146</b>



**B.Com. (COMPUTER APPLICATIONS)**  
**COURSE STRUCTURE 2022 -25 Batch**

Semester	Part	Course Component	Subject Name	Credits	Hours	Internal	External	Total
I	I	Language	Language – I	3	6	50	50	100
	II	English	English- I	3	4	50	50	100
	III	Core I	Practical - Office Automation Package Lab	4	4	50	50	100
	III	Core II	Financial Accounting - I	4	6	50	50	100
	III	Allied I	Business Mathematics and Statistics	5	6	50	50	100
	IV	1. NME/ Basic/Advance Tamil	Basic of Retail Marketing	2	2	50	50	100
	IV	2. Soft Skills - I	Introduction to Study Skills	3	2	-	100	100
<b>CREDIT TOTAL = 24 / TOTAL HOURS PER WEEK - 30</b>								
II	I	Language	Language -II	3	6	50	50	100
	II	English	English - II	3	4	50	50	100
	III	Core III	Financial Accounting - II	4	6	50	50	100
	III	Core IV	Fundamentals of Computers and Information Technology	4	5	50	50	100
	III	Allied II	Operations Research	5	5	50	50	100
	IV	1. NME/ Basic /Advance Tamil	Practical E-Commerce Lab	2	2	50	50	100
	IV	2. Soft Skills - II	Life Skills	3	2	-	100	100
<b>CREDIT TOTAL = 24 / TOTAL HOURS PER WEEK - 30</b>								
III	III	Core V	Corporate Accounting - I	4	6	50	50	100
	III	Core VI	Principles of Management	4	6	50	50	100
	III	Core VII	Programming in C	4	6	50	50	100
	III	Core VIII	Practical - Programming in C Lab	4	5	50	50	100
	III	Allied III	Business Economics	5	5	50	50	100
	IV	Soft Skills - III	Job- Oriented Skills	3	2	-	100	100
<b>CREDIT TOTAL = 24 / TOTAL HOURS PER WEEK - 30</b>								

**B.Com. (COMPUTER APPLICATIONS)**  
**COURSE STRUCTURE 2022 -25 Batch**

Sem.	Part	Course	Title	Credits	Hours	Internal	External	Total
IV	III	Core IX	Corporate Accounting - II	4	6	50	50	100
	III	Core X	Business Laws	4	5	50	50	100
	III	Core XI	Programming in C++	4	6	50	50	100
	III	Core XII	Practical - Programming in C++ Lab	4	5	50	50	100
	III	Allied IV	Marketing Management	5	6	50	50	100
	IV	Soft Skill IV	Soft Skill IV – Quantitative Aptitude	3	2	-	100	100
	IV	EVS	Environmental Studies	2	-	-	100	100
<b>CREDIT TOTAL = 26/ TOTAL HOURS PER WEEK - 30</b>								
V	III	Core XIII	Income Law and Practice - I	4	6	50	50	100
	III	Core XIV	Cost and Management Accounting	4	6	50	50	100
	III	Core XV	Database Management Systems	4	6	50	50	100
	III	Core XVI	Practical - RDBMS using VB. NET Lab	4	5	50	50	100
	III	Elective – I	a) Entrepreneurial Development b) Production & Supply Chain Management c) Business Information System	5	6	50	50	100
	IV	Value Education	Value Education	2	1	-	100	100
	V	Internship	Internship	2	-	-	-	-
<b>CREDIT TOTAL = 25/ TOTAL HOURS PER WEEK - 30</b>								
VI	III	Core XVII	Income Law and Practice - II	4	6	50	50	100
	III	Core XVIII	Human Resource Management	4	6	50	50	100
	III	Core XIX	Software Engineering	4	6	50	50	100
	III	Elective - II	a) Web Technology using PHP b) Python Programming Lab c) R Programming Lab	5	6	50	50	100
	III	Elective - III	Mini Project	5	6	50	50	100
	V	Extension Activity	Participation in NSS/NCC/ROTRACT etc.	1		-	-	-
	<b>CREDIT TOTAL = 23/ TOTAL HOURS PER WEEK - 30</b>							
<b>OVERALL CREDIT TOTAL = 146 / TOTAL HOURS - 180</b>								

# **Semester - I**

## **CORE - I**

### **PAPER TITLE: PRACTICAL – OFFICE AUTOMATION PACKAGE LAB**

<b>SUBJECT CODE :</b>	<b>PRACTICAL</b>	<b>MARKS : 100</b>
<b>SEMESTER: I</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS : 60</b>

#### **COURSE FRAMEWORK:**

This course gives an exposure to Various Software of Office Package.

#### **COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Apply knowledge of Windows operating System
2. To Understand the basics of MS Word and to develop a document with basic menus.
3. Generate MS Excel solutions through Hands on training
4. Design MS PowerPoint Presentations and Train on Internet deployment
5. Develop Business Correspondence skills in the Computerized Platform

#### **MS -WORD**

1. Text Manipulations.
2. Usage of Numbering, Bullets, Footer and Headers.
3. Usage of Spell check, and Find & Replace.
4. Text Formatting.
5. Picture insertion and alignment.
6. Creation of documents, using templates.
7. Creation templates
8. Mail Merge Concepts
9. Copying Text & Pictures from Excel

#### **MS-EXCEL**

10. Cell Editing
11. Usage of Formulae and Built-in Functions
12. File Manipulations
13. Data Sorting (both number and alphabets)
14. Worksheet Preparation
15. Drawing Graphs
16. Usage of Auto Formatting

#### **POWER POINT**

17. Inserting Clip arts and Pictures
18. Frame movements of the above
19. Insertion of new slides
20. Preparation of Organisation Charts
21. Presentation using Wizards
22. Usage of design templates

**CORE - II**  
**PAPER TITLE: FINANCIAL ACCOUNTING – I**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS: 100</b>
<b>SEMESTER: I</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS: 90</b>

**COURSE FRAMEWORK:**

Introduction to basic accounting concepts and principles of the accounting process.

**COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Develop the ability in understanding the basic accounting concepts and prepare final accounts.
2. Understand the procedures of Accounting under Single entry system.
3. Calculate Depreciation under Straight line method and written down value method and calculate Insurance Claims.
4. Acquire knowledge and applicability of Departmental accounts.
5. Understand the need and prepare Bank Reconciliation Statement.

**Unit -I:**

Meaning and Scope of Accounting - Objectives of Accounting - Basic Accounting Concepts – Accounting Transactions - Double Entry Book Keeping - Journal - Ledger - Preparation of Trial Balance – Preparation of Cash Book. Preparation of Final Accounts & Adjustments. (Simple Problems only) **(18 Hours)**

**Unit-II**

Accounting for Incomplete Records (Single Entry) Meaning, Features, Defects, Differences between Single Entry and Double Entry System – Statement of Affairs method – Conversation method. **(18 Hours)**

**Unit-III**

Depreciation – Meaning, causes, types – straight line method and written down value method (Change in method excluded) Insurance claims, claims of stock destroyed including Average Clause. (Simple Problems only) **(18 Hours)**

**Unit-IV**

Departmental Accounts need, features, Basis for Allocation of Expenses, treatment of Inter – Departmental Transfer at cost or Selling Price-Treatment of Expenses that cannot be allocated – Preparation of departmental profit and loss. **(18 Hours)**

**Unit-V**

Bank Reconciliation Statement - Need and Methods of preparation of Bank Reconciliation Statement. **(18 Hours)**

**Proportion of theory and problems: 20% and 80%**

**REFERENCE BOOKS:**

1. R. L. Gupta & M. Radhaswamy – Advanced Accountancy, Sultan Chand , New Delhi.
2. R.L Gupta & V.K. Gupta – Financial Accounting – Sultan Chand Publishing, New Delhi.
3. T.S.Reddy & A. Murthy, Financial Accounting, Margum Publications, Chennai.
4. Dr.S.Manikandan ,Financial Accounting, Scitech Publications, Chennai.

**WEBSITES:**

1. <https://books.google.co.in/books?isbn=8126909935>
2. <https://books.google.co.in/books?isbn=9966254455>
3. <https://books.google.co.in/books?isbn=0470635290>

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks: 100**

Section	Question Component	Numbers	Marks	Total
<b>A</b>	Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	Answer any 2 out of 4 questions (each in 1200 words)	20-23	20	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**Break up of questions for theory and problem**

UNITS	SECTION A		SECTION B		SECTION C	
	THEORY	PROBLEM	THEORY	PROBLEM	THEORY	PROBLEM
I	2	1	1	1	1	1
II	1	1	-	1	-	-
III	1	1	-	1	-	1
IV	2	1	1	1	-	-
V	1	1	-	1	-	1
<b>TOTAL</b>	<b>7</b>	<b>5</b>	<b>2</b>	<b>5</b>	<b>1</b>	<b>3</b>
<b>SECTION A - 12</b>			<b>SECTION B - 7</b>		<b>SECTION C - 4</b>	

## ALLIED – I

### BUSINESS MATHEMATICS AND STATISTICS

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: I</b>	<b>CREDITS: 5</b>	<b>NO. OF HOURS : 90</b>

#### COURSE FRAMEWORK

To apply knowledge of mathematics with emphasis on management applications and interpret and solve business related problems.

#### COURSE OUTCOME:

On completion of the course the students will be

1. To understand the basic concepts of sets, relations and functions.
2. To acquire basic knowledge on Binary number system and Matrices.
3. To learn the knowledge of Ratio, Proportion, Permutation and Combination.
4. To gain the basic idea of statistics and the statistical techniques by diagrammatic representation for business.
5. To acquire the concepts of statistics and understand the statistical techniques used for business data analysis.

#### UNIT I

Ratio, Proportion, Permutation and Combination **(18 Hours)**

#### UNIT II

Interest and Annuity – Banker's Discount **(18 Hours)**

#### UNIT III

Differential Calculus – Derivative of a function – Rules for differentiation – Increasing and decreasing functions. Application of Differentiation – Marginal analysis – Marginal cost and average cost function - Marginal revenue and average revenue function **(18 Hours)**

#### UNIT IV

Introduction: Statistics - Definitions; Variables - Quantitative and Qualitative data – Primary and Secondary - Collection of data - Census method - Sampling methods - Classification and Presentation of data - Tabulation - Frequency Distribution – Diagrammatic and Graphical representation of data – Bar diagram – Pie Diagram – Frequency Curve - Ogive– Histogram – Frequency Polygon – Lorenz Curve. **(18 Hours)**

#### UNIT V

**Measures of Central Tendency** - Mean, Median and Mode, – **Measures of Variation** – Range, Quartile Deviation, Standard Deviation, Mean Deviation and Coefficients - their characteristics – uses and limitations. **(18 Hours)**

#### REFERENCE BOOKS:

1. Business Mathematics & Statistics – P.R. Vittal
2. Statistical Methods – S.P. Gupta, Sultan 2000.
3. Business Mathematics – D.C. Sancheti and V.K. Kapoor
4. Business Mathematics – B.M. Agarwal
5. Business Mathematics – R.S. Soni

**WEBSITES:**

1. [www.freetechnbooks.com/mathematics-f38.html](http://www.freetechnbooks.com/mathematics-f38.html)
2. [www.e-booksdirectory.com](http://www.e-booksdirectory.com)
3. [www.freebookcentre.net/SpecialCat/Free-Mathematics-Books-Download.html](http://www.freebookcentre.net/SpecialCat/Free-Mathematics-Books-Download.html)

**QUESTION PAPER PATTERN:**

<b>Section</b>	<b>Question Component</b>	<b>Numbers</b>	<b>Marks</b>	<b>Total</b>
A	Answer any 10 out of 12	1-12	3	30
B	Answer any 5 out of 7	13-19	6	30
C	Answer any 4 out of 6	20-25	10	40
	<b>TOTAL MARKS</b>			<b>100</b>

**DISTRIBUTION OF QUESTIONS: (Problems – 75% and Theory – 25%)**

<b>Section</b>	<b>Distribution of Questions:</b>
<b>A</b>	At least two and not more than three questions from each unit.
<b>B</b>	At least one and not more than two questions from each unit.
<b>C</b>	At least one question from each unit.

**NON-MAJOR ELECTIVE -I**  
**PAPER TITLE: BASICS OF RETAIL MARKETING**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: I</b>	<b>CREDITS: 2</b>	<b>NO. OF HOURS : 30</b>

**COURSE FRAMEWORK:**

Introduction to Retail Marketing intends to provide the students with an overview of the retail industry, concepts and processes and how to use it most effectively in each specific sales channel.

**COURSE OUTCOMES:**

On completion of the course the students will be:

1. Analyze the growth and various trend in retail business.
2. Provide the basic understanding to broad set of specialized activities and techniques in managerial retail business.
3. Motivate the students to take up retailing business as a carrier in their location and
4. understand labelling and Franchising concept
5. Understand various Communication tools used in retailing.

**UNIT – I**

**(6 Hours)**

Retailing-Definition-Retail marketing – Growth of organized retailing in India – Importance of Retailing.

**UNIT- II**

**(6 Hours)**

Functions of Retailing – Characteristics of Retailing –Types of Retailing – Store Retailing – Non store Retailing.

**UNIT – III**

**(6 Hours)**

Retail Location Factors – Branding in Retailing – Private Labelling – Franchising concept.

**UNIT – IV**

**(6 Hours)**

Communication tools used in retailing – sales promotion, E- Retailing – Window Display.

**UNIT – V**

**(6 Hours)**

Supply Chain Management – Definition – Importance – Role of information technology in Retailing.

**REFERENCE BOOKS:**

1. Gilbert Pearson , Retail Marketing Education Asia , 2001
2. Vedamani Gibson , Retail Marketing Jaici Publishing House New Delhi– 2000
3. Herman & Evans Retail Management Phi , New Delhi -2001
4. Michael Levy and Barton A Weitz , Retail Management Tata Mc , Graw hill, New Delhi - 2001
5. Dr. L. Natarajan , Retail Marketing , Margham Publication Chennai.

**NON MAJOR ELECTIVE -I**

**PAPER TITLE: BASICS OF RETAIL MARKETING**

**GUIDELINES TO THE QUESTION PAPER SETTERS**

**QUESTION PAPER PATTERN:**

**Max. Marks: 100**

<b>Section</b>	<b>Question Component</b>	<b>Numbers</b>	<b>Marks</b>	<b>Total</b>
<b>A</b>	<b>Essay</b> Answer any 5 out of 10 questions (each in 1200 words)	1-10	20	<b>100</b>

**DISTRIBUTION OF QUESTIONS:**

<b>Section</b>	<b>Units</b>	<b>No. of Questions</b>	
		<b>Theory</b>	<b>Problems</b>
<b>A</b>	Unit – 1	2	
	Unit – 2	2	
	Unit – 3	2	
	Unit – 4	2	
	Unit – 5	2	

**SOFT SKILLS – I**  
**PAPER TITLE: INTRODUCTION TO STUDY SKILLS**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: I</b>	<b>CREDITS: 3</b>	<b>NO. OF HOURS : 30</b>

**COURSE FRAMEWORK:**

- To help, develop and improve the vocabulary of the learners
- To help the learners develop the skill of inference
- To help the learners to acquire writing skills in English

Use of Dictionary and Dictation

Speech Sounds in English & Right Pronunciation Stress & Intonation

Vocabulary Building Exercises Listening and Reading Comprehension Paragraph and Essay Writing

**REFERENCE BOOKS:**

1. Hewings, Martin. 1999. Advanced English Grammar: A Self- study Reference and Practice Book for South Asian Students. Reprint 2003. Cambridge University Press. New Delhi.
2. Lewis Norman. 1991. Word Power Made Easy.
3. Mohan, Krishna & Meenakshi Raman. 2000. Effective English Communication. Tata Mc Graw Hill Publishing Company Ltd.
4. Mohan, Krishna & Meera Banerji. 2001. Developing Communication Skills. Macmillan. Syamala. 2002. Effective English Communication for You. Emerald Publishers, Chennai.
5. Harishankar, Bharathi. Ed. Essentials of Language and Communication. University of Madras.
6. Swan, Michael and Catherine Walter. 1990. The Cambridge English Course-2. Cambridge University Press.

# **Semester - II**

**CORE - III**  
**PAPER TITLE: FINANCIAL ACCOUNTING - II**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: II</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS: 90</b>

**COURSE FRAMEWORK:**

Introduction of Advance Accounting Concept for various kinds of business transactions.

**COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Understand the Accounting Standards and Financial Reporting.
2. Demonstrate the accounting procedure for Branch Accounts under debtors' system and stock & debtors' system.
3. Explain the concept of Hire purchase transactions, calculation of interests and various accounting treatments of Hire purchase system.
4. Analyse the accounting treatment of admission, retirement and death of a Partner.
5. Discuss the various procedures for accounting treatment of Dissolution, Garner Vs Murray, piece meal distribution and maximum loss method.

**UNIT -I**

Accounting Standards for financial reporting-Objectives and uses of financial statements for users-Role of accounting standards. Development of accounting standards in India- Requirements of international accounting standards. Ind AS- Difference between Ind AS and IFRS. (Theory) **(18 Hours)**

**UNIT -II**

Branch Accounting-Dependent branches only and Ascertainment of Profit by Debtors method and Stock and Debtors System. (Simple Problems Only) **(18 Hours)**

**UNIT-III**

Hire Purchase System-Meaning & features, legal provisions of Hire Purchase Act, calculation of Interest, Journal entries in the books of Vendee and Vendor, preparation of various ledger, in the books of hire purchaser and seller. (Simple Problems Only) **(18 Hours)**

**UNIT-IV**

Partnership Firms-Admission of a Partner, Retirement and death of a partner including treatment of goodwill. (Simple Problems Only) **(18 Hours)**

**UNIT V:**

Dissolution of a firm-Garner Vs Murray Case- Insolvency-Piecemeal Distribution and Maximum Loss Method (Simple Problems Only) **(18 Hours)**

**Proportion of theory and problems: 20% and 80%**

**REFERENCE BOOKS:**

1. R. L. Gupta & M. Radhaswamy – Advanced Accountancy, Sultan Chand , New Delhi.
2. R.L Gupta & V.K. Gupta – Financial Accounting – Sultan Chand Publishing, New Delhi.
3. T.S.Reddy & A. Murthy, Financial Accounting, Margum Publications, Chennai.
4. Dr.S.Manikandan ,Financial Accounting, Scitech Publications, Chennai.

**WEBSITES:**

1. <https://books.google.co.in/books?isbn=8126909935>
2. <https://books.google.co.in/books?isbn=9966254455>
3. <https://books.google.co.in/books?isbn=0470635290>

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks: 100**

Section	Question Component	Numbers	Marks	Total
<b>A</b>	Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	Answer any 2 out of 4 questions (each in 1200 words)	20-23	20	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**Break up of questions for theory and problem**

UNITS	SECTION A		SECTION B		SECTION C	
	THEORY	PROBLEM	THEORY	PROBLEM	THEORY	PROBLEM
<b>I</b>	3	-	2	-	1	-
<b>II</b>	1	1	-	1	-	1
<b>III</b>	1	1	-	1	-	1
<b>IV</b>	2	1	1	1	-	-
<b>V</b>	1	1	-	1	-	1
<b>TOTAL</b>	8	4	3	4	1	3
<b>SECTION A - 12</b>			<b>SECTION B - 7</b>		<b>SECTION C - 4</b>	

**CORE - IV**

**PAPER TITLE: FUNDAMENTALS OF COMPUTERS AND INFORMATION TECHNOLOGY**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS: 100</b>
<b>SEMESTER: II</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS : 75</b>

**COURSE FRAMEWORK:**

This course introduces to learn the basic concepts of Computer Science.

**COURSE OUTCOMES:**

On completion of the course the students will be able:

1. To understand the Computer Fundamentals, Computer History and Computer Types of Computer.
2. To know about the different devices used for Computer
3. To Understand System and Application Software concepts
4. To give exposure to Techniques of Problem Solving: Flowcharting, Algorithms and basic terminology used in computer programming.
5. To know about data structures and create/update basic data files, Basic of Internet usage.

**UNIT-I**

**(15 Hours)**

The Computer system-their uses and components-CPU: control & logic unit -Generation of computers-Classification of Computers - PC-Laptop - Memory: Volatile, non-volatile & virtual memory-Types of Bus.

**UNIT-II**

**(15 Hours)**

Input devices: Keyboard, mouse, joystick, scanner, light pen, and touch screen - Output devices: printers, dot-matrix printer, ink-jet printer, laser printer-monitor. Storage devices: Magnetic tape, Hard disks, CD-ROM, Speakers

**UNIT-III**

**(15 Hours)**

Software concepts: Types of software -System software: Operation System and its types, Assembler, Compiler, Interpreter. - Application software: Word processing, Presentation tools, Electronic Spreadsheets Database system, DTP Packages, Graphic packages, Business system.

**UNIT-IV**

**(15 Hours)**

Principles and Techniques of Programming: Program definition-Program lifestyle. -Flow-Chart: Definition, Symbols, Benefits, Limitations and examples. - Characteristics, Benefits, Drawbacks and Examples of Algorithms.

**Unit-V**

**(15 Hours)**

Databases: Structure of a data table. -Internet features– E-mail

**PRESCRIBED BOOKS:**

1. C.S.V.Murthy, 2001, Fundamentals of Computers, 1st Edition, Himalaya publishing House.
2. LPEditorial Board, Fundamentals of Computer, 1st Edition, Law Point Publishers.

**REFERENCE BOOKS:**

1. V.RAJARAMAN, 2002, Fundamentals of Computers, 3rd Edition, Prentice Hall of India.
2. Marilyn W. Meyer and Roberta L. Baber, Computers in your future, 2nd Edition Prentice Hall of India

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks: 100**

Section	Question Component	Numbers	Marks	Total
<b>A</b>	<b>Definition/Principle</b> Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
	<b>Short Answer</b> Answer any 5 out of 7 questions (each in 300 words)			
<b>B</b>	<b>Essay</b> Answer any 4 out of 6 questions (each in 600 words)	20-25	10	<b>40</b>
	<b>Short Answer</b> Answer any 5 out of 7 questions (each in 300 words)			
<b>TOTAL MARKS</b>				<b>100</b>

**DISTRIBUTION OF QUESTIONS:**

Section	Units	No. of Questions	
		Theory	Problems
<b>A</b>	Unit – 1	3	
	Unit – 2	3	
	Unit – 3	2	
	Unit – 4	2	
	Unit – 5	2	
<b>B</b>	Unit – 1	2	
	Unit – 2	2	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	
<b>C</b>	Unit – 1	2	
	Unit – 2	1	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	

**ALLIED - II**  
**OPERATIONS RESEARCH**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER : II</b>	<b>CREDITS : 5</b>	<b>NO. OF HOURS: 75</b>

**COURSE FRAMEWORK:**

To give an overall idea about the various Optimization techniques and their usages.

**COURSE OUTCOME:**

1. To introduce Operations Research and their applications. Explain the concepts of Linear Programming Problems and Formulating LPP
2. Solve LPP by Graphical and Simplex method
3. Formulate LPP to Transportation problem, find initial solution using North West corner Rule, Least cost method and Vogel's Approximation method. Formulate LPP to Assignment Problem, Solve it by Hungarian method
4. Demonstrate Sequencing Problem and solve n-jobs through 2,3 and m machines. Solve two person zero sum games by Minimax - Maximin principle, Dominance property. Solve  $2 \times m$  and  $n \times 2$  games by graphical method.
5. Draw Networks and discuss the critical path by Floats and PERT techniques

**UNIT I**

Introduction to Operations Research- Meaning- Origin and History- Characteristics - Features –Need - Scope -Application-Limitations- Requirements for employing LPP Technique-Mathematical Formulation of Linear Programming Problem–Advantages of LPP –Limitations of LPP. Graphical Method of the solution of a Linear Programming Problem **(15 Hours)**

**UNIT II**

General LPP--Simplex Method for Slack Variable Case –Maximization, Minimization problems. Transportation Problems –Mathematical formulation -Methods for finding Initial Basic Feasible Solution -North West Corner Rule- Least Cost Method –Vogel's Approximation Method. **(15 Hours)**

**UNIT III**

Degeneracy- Unbalanced - Maximization case in Transportation. Assignment Problems-Mathematical formulation- Comparison with Transportation Model –Difference between the Transportation and Assignment problem-Hungarian Method -Unbalanced and Maximization case in Assignment Problem. **(15 Hours)**

**UNIT IV**

**Sequencing problem:** processing n jobs through 2 machines - processing n jobs through 3 machines - Processing each of n jobs through m machines- processing 2 jobs through m machines.

**Game Theory:** Two person zero – sum games – Maximin – Minimax Principle – Saddle point and value of the game – Game without saddle point, Mixed Strategies – Dominance Property – solving  $2 \times n$  game or  $m \times 2$  game by graphical method. **(15 Hours)**

## UNIT V

Network Analysis: Critical Path Method – Programme Evaluation and Review Techniques -  
Project Network Diagram – Critical Path. **(15 Hours)**

### REFERENCE BOOKS:

1. Resource Management Techniques - V. Sundaresan, K.S. Ganapathy Subramanian, K. Ganesan, A.R. Publications, Chennai.
2. Elements of Operations Research - S.Gurusamy, Vijay Nicole Imprints private Limited, Chennai.
3. Introduction to Operations Research – Dr. P.R. Vittal, Margham Publications
4. Operations Research – Hira and Gupta, S.Chand.
5. Operations Research – Hardy and A.Taha, Macmillan Publishers.

### WEBSITES FOR ONLINE COURSE:-

1. <https://www.edx.org/course/operations-research-an-active-approach>
2. SWAYAM & MOOC courses titled Operations research.
3. <https://alison.com/course/diploma-in-operations-management-ops>
4. <https://www.udemy.com/course/operations-management/>

### QUESTION PAPER PATTERN:

Section	Question Component	Numbers	Marks	Total
A	Answer any 10 out of 12	1-12	3	30
B	Answer any 5 out of 7	13-19	6	30
C	Answer any 4 out of 6	20-25	10	40
	<b>TOTAL MARKS</b>			<b>100</b>

### DISTRIBUTION OF QUESTIONS: (Problems – 75% and Theory – 25%)

Section	Distribution of Questions:
<b>A</b>	At least two and not more than three questions from each unit.
<b>B</b>	At least one and not more than two questions from each unit.
<b>C</b>	At least one question from each unit.

## NON-MAJOR ELECTIVE - II

### PAPER TITLE: PRACTICAL - PRACTICAL E-COMMERCE LAB

<b>SUBJECT CODE :</b>	<b>PRACTICAL</b>	<b>MARKS : 100</b>
<b>SEMESTER: II</b>	<b>CREDITS: 2</b>	<b>NO. OF HOURS : 30</b>

#### **COURSE FRAMEWORK:**

To Learn how to design, develop and implement ecommerce web applications and to demonstrate how businesses sell products and services on the Web

#### **COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Investigate the emergence of E Commerce and outline different tags to design a web page in HTML.
2. Assess the applicability of Big Data and Digital Dashboards.
3. Create a CSS sheets in HTML web page
4. Integrate theoretical knowledge to Practical application to design the Web Page
5. Outline skills to map inter-dependence of technology in day to day life.

1. Implements basic HTML tags
2. Implementation of Table tag
3. Implementation of FRAMES
4. Design a FORM in HTML(Yahoo registration form)
5. Validation of FORM using Java Script.
6. Implementation of CSS(All 4 Types)
7. Develop a clock using Java Script
8. DHTML(Layer/DIV)
9. ASP Implement Response Object
- 10.Connectivity to Database through ASP
- 11.PROJECT- Develop an E-Commerce Web Site

**SOFT SKILLS – II**  
**PAPER TITLE: LIFE SKILLS**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS: 100</b>
<b>SEMESTER: II</b>	<b>CREDITS: 3</b>	<b>NO. OF HOURS : 30</b>

**COURSE FRAMEWORK:**

- To build the confidence of learners to face the challenges of a globalized society
- To sensitize learners' ethical, moral and social values in their work environment
- To help them understand how to overcome stress-related problems
- To train the learners to use their time effectively

SWOC Analysis

Etiquette

Stress Management

Time Management

Discussion of Success Stories

- i. Auto-suggestions
- ii. Problem solving
- iii. Decision Making
- iv. Presentation Skills-Oral/PPT

**REFERENCE BOOKS:**

1. Pease, Allen. 1998. Body Language: How to read other's thoughts by their gestures. Sudha Publications. New Delhi.
2. Powell. In Company. MacMillan

**WEBLINKS:**

1. <http://www.essentiallifeskills.net/>

# **Semester-III**

**CORE - V**  
**PAPER TITLE: CORPORATE ACCOUNTING – I**

<b>SUBJECT CODE:</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: III</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS : 90</b>

**COURSE FRAMEWORK:**

Introduction to Corporate Accounting and preparation of financial statement for companies.

**COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Prepare the journal entries of issue of shares, forfeiture, re-issue of shares and redemption of shares and compute underwriter's liabilities.
2. Demonstrate thorough knowledge of relevant accounting treatment of Issue and redemption of Debentures and the ability to find the profit prior to incorporation of companies.
3. Select the appropriate methods of valuation of shares and goodwill and perform the accounting treatment of the company.
4. Demonstrate thorough knowledge in preparation of financial statements of companies
5. Prepare Insurance companies accounting.

**Unit –I**

**(18 Hours)**

Issue of shares- Forfeiture and re-issue of shares. Redemption of shares-Underwriting of shares-Determination of the liability of underwriters-Complete Underwriting-Partial Underwriting-Firm Underwriting.

**Unit-II**

**(18 Hours)**

Debentures - Issue of Debentures – Redemption of Debentures- Profit prior to Incorporation. (Simple Problems)

**Unit-III**

**(18 Hours)**

Valuation of Goodwill and shares-Methods of Valuation of Goodwill-Average profits method-Super profit method-Capitalization Method-Methods of Valuation of shares-Net assets method-Yield Method-Fair value method (Simple Problems only)

**Unit-IV**

**(18 Hours)**

Final Accounts - Managerial Remuneration. Preparation of Profit & Loss account and Balance sheet.  
(Simple Problems)

**Unit-V**

**(18 Hours)**

Accounting for Life Insurance Companies – Life Insurance revenue account- Balance-Determination of amount due to policy holders. (Simple Problems only).

Proportion of theory and problems: 20% and 80%

**REFERENCE BOOKS:**

1. Corporate Accounting-T.S. Reddy & A.Murthy- Margham publishers.
2. Corporate Accounting-R.L.Gupta&Radhaswamy-Sultan chand &sons.New Delhi.
3. 3.Advanced Accounting-M.C.Shukla&T.S.Grewal.
4. Advanced Accounting-S.P.Jain &K.L.Narang.Kalyani publishers.

**WEBLINKS:**

1. [https://www.youtube.com/channel/UCaXP40Q7n9vACnOZ-zT\\_GUQ](https://www.youtube.com/channel/UCaXP40Q7n9vACnOZ-zT_GUQ)

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks: 100**

Section	Question Component	Numbers	Marks	Total
<b>A</b>	Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	Answer any 2 out of 4 questions (each in 1200 words)	20-23	20	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**Break up of questions for theory and problem**

UNITS	SECTION A		SECTION B		SECTION C	
	THEORY	PROBLEM	THEORY	PROBLEM	THEORY	PROBLEM
<b>I</b>	2	1	1	1	1	1
<b>II</b>	1	1	-	1	-	-
<b>III</b>	1	1	-	1	-	1
<b>IV</b>	2	1	1	1	-	-
<b>V</b>	1	1	-	1	-	1
<b>TOTAL</b>	7	5	2	5	1	3
<b>SECTION A - 12</b>			<b>SECTION B - 7</b>		<b>SECTION C - 4</b>	

## CORE - VI

### PAPER TITLE: PRINCIPLES OF MANAGEMENT

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: III</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS : 90</b>

#### **COURSE FRAMEWORK:**

An Introduction towards the basic principles and functions of management.

#### **COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Have clear understanding of managerial functions like planning, and have basic knowledge on international aspect of management.
2. Understand the planning process in the organization.
3. Understand the concept of organization.
4. Demonstrate the ability to Directing, Recruitment and Training.
5. Analysis isolate issues and formulate best control methods and Co-ordination.

#### **UNIT – I**

**(18 Hours)**

Management: Importance – Definition- Nature and Scope of Management Process – Role and Functions of a Manager – Levels of Management – Evolution of Management thoughts : Scientific Management – F.W.Taylor, Administrative Management – Henry Fayol, The Human Relationship Management School – Hawthorne Experiment .

#### **UNIT – II**

**(18 Hours)**

Planning: Nature – Importance – Forms – Types – Steps in Planning – Objectives Policies – Procedures and Methods – Natures and Types of Policies – Decision-making Process of Decision-making – Types of Decision.

#### **UNIT- III**

**(18 Hours)**

Organisation: Types of Organisations – Organisation Structure – Span of Control and Committees – Departmentalisation – Informal Organisation.

#### **UNIT- IV**

**(18 Hours)**

Authority – Delegation – Decentralisation –Difference between Authority and Power – Responsibility – Recruitment – Sources, Selection, Training – Direction – Nature and purpose.

#### **UNIT- V**

**(18 Hours)**

Co-ordination - Need, Type and Techniques and requisites for excellent Co- ordination – Controlling – Meaning and Importance – Control Process.

#### **REFERENCE BOOKS:**

1. C.B.Gupta, Management Theory & Practice -Sultan Chand & Sons - New Delhi.
2. L.M.Prasad, Principles & Practice of Management - Sultan Chand & Sons - New Delhi.
3. P.C. Tripathi & P.N Reddy, Principles of Managements - Tata Mc.Graw Hill - New Delhi.
4. Weihrich and Koontz, Management – A Global Perspective.
5. N.Premavathy, Principles of Management - Sri Vishnu Publication - Chennai.

<https://books.google.co.in/books?isbn=0070220883>

<https://books.google.co.in/books?isbn=0754619842>

<https://books.google.co.in/books?isbn=05471484>

**CORE VI**  
**PAPER TITLE: PRINCIPLES OF MANAGEMENT**

**QUESTION PAPER PATTERN:**

**Max. Marks: 100**

Section	Question Component	Numbers	Marks	Total
<b>A</b>	<b>Definition/Principle</b> Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	<b>Short Answer</b> Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	<b>Essay</b> Answer any 4 out of 6 questions (each in 600 words)	20-25	10	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**DISTRIBUTION OF QUESTIONS:**

Section	Units	No. of Questions	
		Theory	Problems
<b>A</b>	Unit – 1	3	
	Unit – 2	3	
	Unit – 3	2	
	Unit – 4	2	
	Unit – 5	2	
<b>B</b>	Unit – 1	2	
	Unit – 2	2	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	
<b>C</b>	Unit – 1	2	
	Unit – 2	1	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	

**CORE VII**  
**PAPER TITLE: PROGRAMMING IN C**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: III</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS : 90</b>

**COURSE FRAMEWORK:**

This course introduces to learn the basic concepts of C programming and it is designed to expand the knowledge of C Programs.

**COURSE OUTCOMES:**

On completion of the course the students will be able:

1. To understand the Fundamentals of C Programming and a basic Knowledge about Computers
2. To Understand the basic terminology used in Computer programs and Operators.
3. To give exposure on Functions and Storage classes
4. Analyze the different types of arrays and employ them in program coding
5. Analyze user defined functions, Pointers and files

**UNIT I**

**(18 Hours)**

Introduction to computer - Fundamental Character set - Identifier and keywords - data types - constants - Variables - Declarations - Expressions - Statements - Arithmetic, Unary, Relational and logical, Assignment and Conditional Operators - Library functions.

**UNIT II**

**(18 Hours)**

Data input output functions - Simple C programs - Flow of control - if, if-else, while, do-while, for loop, Nested control structures - Switch, break and continue, go to statements - Comma operator.

**UNIT III**

**(18 Hours)**

Functions –Definition - proto-types - Passing arguments – Recursions- Storage Classes - Automatic, External, Static, Register Variables – Multi-file programs.

**UNIT IV**

**(18 Hours)**

Arrays - Defining and Processing - Passing arrays to functions – Multi-dimension arrays - Arrays and String. Structures - User defined data types - Passing structures to functions - Self-referential structures – Unions - Bit wise operations.

**UNIT V**

**(18 Hours)**

Pointers-Declarations- Passing pointers to Functions - Operation in Pointers - Pointer and Arrays - Arrays of Pointers - Structures and Pointers – Files- Creating, Processing, Opening and Closing a data file.

**PRESCRIBED BOOKS:**

1. E.Balaguruswamy, 1995, Programming in ANSI C, TMH Publishing Company Ltd.

**REFERENCE BOOKS:**

1. H. Schildt, 2004, The Complete Reference, 4<sup>th</sup> Edition, TMH
2. Gottfried, B.S, 1996, Programming with C, Second Edition, TMH Pub. Co. Ltd., New Delhi .
3. Kanetkar Y, 1999, Let us C, BPB Publications., New Delhi.
4. Kamthane, 2002, Programming with ANSI & Turbo C , First Edition, Pearson Education, New Delhi

## GUIDELINES TO THE QUESTION PAPER SETTERS

### QUESTION PAPER PATTERN:

**Max. Marks: 100**

Section	Question Component	Numbers	Marks	Total
<b>A</b>	<b>Definition/Principle</b> Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	<b>Short Answer</b> Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	<b>Essay</b> Answer any 4 out of 6 questions (each in 600 words)	20-25	10	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

### DISTRIBUTION OF QUESTIONS:

Section	Units	No. of Questions	
		Theory	Problems
<b>A</b>	Unit – 1	3	
	Unit – 2	3	
	Unit – 3	2	
	Unit – 4	2	
	Unit – 5	2	
<b>B</b>	Unit – 1	2	
	Unit – 2	2	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	
<b>C</b>	Unit – 1	2	
	Unit – 2	1	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	

**CORE - VIII**  
**PAPER TITLE: PRACTICAL - PROGRAMMING IN C LAB**

<b>SUBJECT CODE :</b>	<b>PRACTICAL</b>	<b>MARKS : 100</b>
<b>SEMESTER: III</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS : 75</b>

**COURSE FRAMEWORK:**

This course gives exposure to hands on training in C programming To Read, understand, develop and trace the execution of programs written in C language.

**COURSE OUTCOME:**

On completion of the course the students will be able:

1. This course gives exposure to hands on training in C programming
  2. To familiarize the student with basic concepts of computer programming and developer tools.
  3. To present the syntax and semantics of the “C” language as well as data types offered by the language.
  4. To allow the student to write their own programs using standard language infrastructure regardless of the hardware or software platform.
  5. To understand the role of functions involving the idea of modularity.
- 
1. Write a program to add, subtract, multiply and divide two numbers using menu driven program.(Arithmetic operation)
  2. Write a program to check if a number is even or odd(if-else)
  3. Write a program to find the largest of three numbers.(using if-else, logical and)
  4. Write a program to find the maximum and minimum of n numbers (using for-statement)
  5. Write a program to check for prime number(do while loop)
  6. Write a program to check for Armstrong number(while loop)
  7. Write a program to accept day number and print the day of the week.(switch)
  8. Write a program for counting the number of vowels, consonants, words, white spaces in a line of text (switch)
  9. Write a program to arrange a set of numbers in ascending order.(1D Array)
  10. Write a program to implement linear search.(1D Array)
  11. Write a program to implement binary search. (1D Array).
  12. Write a program to add two matrices (2D Arrays)
  13. Write a program to check whether a string is a palindrome or not. (String)
  14. Write a program to print Fibonacci series using function.
  15. Write a program to find factorial of a number using recursive function.

**ALLIED – III**  
**PAPER TITLE: BUSINESS ECONOMICS**

<b>SUBJECT CODE:</b>	<b>THEORY</b>	<b>MARKS: 100</b>
<b>SEMESTER: III</b>	<b>CREDITS: 5</b>	<b>NO. OF HOURS : 75</b>

**COURSE FRAMEWORK:**

An Introduction to the basic concepts and theories of Business Economics.

**COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Understand the importance and Role of Business Economics.
2. Perceive the knowledge about Economics at Micro level and various economic concepts such as Demand Function and Law of Demand and Supply.
3. Understand the Consumer Behaviour Theories
4. Learn the production theories
5. Perceive the knowledge about different market structure and various pricing techniques.

**UNIT – I** **(15 Hours)**

Definition- Nature, Scope and importance of Business Economics – Role of Business Economist – Positive and Normative Economics.

**UNIT – II** **(15 Hours)**

Meaning of demand – Distinctions of demand – Law of Demand – Elasticity of demand – Supply concepts.

**UNIT – III** **(15 Hours)**

Consumer Behaviour Theories- Law of Diminishing Marginal Utility - Equi- Marginal Utility- Indifference Curve- Properties

**UNIT – IV** **(15 Hours)**

Production – Factors of Production - Production theories - Law of Variable Proportion, Law of Returns to Scale. - Iso Quants

**UNIT - V** **(15 Hours)**

Pricing – Objectives – Factors influencing pricing – Classification of Pricing – Break Even Analysis.

**REFERENCE BOOKS:**

1. Business Economics – E. Dharmaraj – Scitech publications
2. S.Shankaran , Business Economics – Margham publications Ch -17
3. A.L. Ahuja , Business Economics – RBSA publishers Jaipur – 03
4. Aryasri and Murthy: Business Economics, Tata Mcgraw Hill.
5. Mithani: Fundamentals of Business Economics, Himalaya.

**WEBLINKS:**

1. <https://books.google.co.in/books?isbn=0470021128>
2. <https://books.google.co.in/books?isbn=1451602391>
3. <https://books.google.com/books?isbn=0333961110>

## GUIDELINES TO THE QUESTION PAPER SETTERS

**QUESTION PAPER PATTERN:**

**Max. Marks: 100**

Section	Question Component	Numbers	Marks	Total
<b>A</b>	<b>Definition/Principle</b> Answer any 10 out of 12 questions (Each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	<b>Short Answer</b> Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	<b>Essay</b> Answer any 4 out of 6 questions (each in 600 words)	20-25	10	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**DISTRIBUTION OF QUESTIONS:**

Section	Units	No. of Questions	
		Theory	Problems
<b>A</b>	Unit – 1	3	
	Unit – 2	3	
	Unit – 3	2	
	Unit – 4	2	
	Unit – 5	2	
<b>B</b>	Unit – 1	2	
	Unit – 2	2	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	
<b>C</b>	Unit – 1	2	
	Unit – 2	1	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	

**SOFT SKILLS – III**  
**PAPER TITLE: JOB-ORIENTED SKILLS**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS: 100</b>
<b>SEMESTER: III</b>	<b>CREDITS: 3</b>	<b>NO. OF HOURS : 30</b>

**COURSE FRAMEWORK:**

- To prepare the students to be job-ready.
- To help learners use English Language appropriately to the role or situation.
- To develop confidence in them to face Interviews.
- To train them to prepare their own CV/Resume

Different kinds of Interviews

Letter of Application and CV

Technical Writing - Circulars, Memos, Agenda and Minutes

Group Discussion

Review

- i. Books
- ii. Films

**REFERENCE BOOKS:**

1. Harishankar, Bharathi. ed. Essentials of Spoken and Presentation Skills. University of Madras.
2. John, Seely. 1998. The Oxford Guide to writing and speaking. Oxford U P, 1998, Delhi.
3. The Princeton Language Institute and Lanny Laskowski.2001. 10 days to more confident Public Speaking. Warner Books.
4. <http://jobsearch.about.com/cs/curriculumvitae.html//>
5. <http://www.cvtips.com//>

**QUESTION PAPER PATTERN**

**UG - SOFT SKILLS**

**TIME – 3 HRS**

**MAXIMUM MARKS – 50**

**PART – A (5X2=10)**

Answer any FIVE from the questions given below from Q.No.1 to Q.No.7 (5 out of 7)

**PART – B (4X5=20)**

Answer any FOUR from the questions given below from Q.No.8 to Q.No.13 (4 out of 6)

**PART – C (2X10=20)**

Answer TWO questions only choosing one each from Q.No.14 &Q.No.15 (Internal Choice)

# **Semester - IV**

**CORE - IX**  
**PAPER TITLE: CORPORATE ACCOUNTING – II**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS: 100</b>
<b>SEMESTER: IV</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS : 90</b>

**COURSE FRAMEWORK:**

Introduction to advance concepts and accounting treatment for Companies and Banks

**COURSE OUTCOMES:**

On completion of the course the students will be able

1. Learn the concepts of various procedures in alteration of share capital and accounting treatment in respect of internal reconstruction of a company.
2. Analyse the accounting procedure of amalgamation of companies, absorption & external reconstruction of companies.
3. Prepare the liquidator's final statement of accounts at the time of winding up of the companies.
4. Prepare the final statement of Holding companies and Subsidiary companies.
5. Demonstrate a thorough knowledge of related accounting treatment and apply them to solve banking company's financial statement and understand the concept of NPA.

**UNIT I: (18 Hours)**

Meaning - Alteration of share capital and Internal Reconstruction – Accounting Procedures.

**UNIT II: (18 Hours)**

Amalgamation, Absorption and External reconstruction- Computation of purchase consideration- Pooling of interest method-Purchase Method-Accounting treatment- Journal Entries-Preparation of Balance sheet. (Simple Problems)

**UNIT-III: (18 Hours)**

Liquidation - Calculation of Liquidator Remuneration-Preparation of Liquidator's Final Statement of Accounts.

**UNIT IV: (18 Hours)**

Consolidated final statement of Holding companies and Subsidiary companies (Intercompany holdings excluded)

**UNIT-V: (18 Hours)**

Bank accounts - Preparation of Profit and Loss Account - Preparation of Balance Sheet.

**Proportion of theory and problems: 20% and 80%**

**REFERENCE BOOKS:**

1. Corporate Accounting-T.S. Reddy & A.Murthy- Margham publishers.
2. Corporate Accounting-R.L.Gupta&Radhaswamy-Sultan chand &sons.New Delhi.
3. Advanced Accounting-M.C.Shukla&T.S.Grewal
4. Advanced Accounting-S.P.Jain &K.L.Narang.Kalyani publishers.

**WEBLINKS:**

1. <https://books.google.co.in/books?isbn=8131754510>
2. [https://www.youtube.com/channel/UCaXP40Q7n9vACnOZ-zT\\_GU](https://www.youtube.com/channel/UCaXP40Q7n9vACnOZ-zT_GU)

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks:** 100

Section	Question Component	Numbers	Marks	Total
<b>A</b>	Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	Answer any 2 out of 4 questions (each in 1200 words)	20-23	20	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**Break up of questions for theory and problem**

UNITS	SECTION A		SECTION B		SECTION C	
	THEORY	PROBLEM	THEORY	PROBLEM	THEORY	PROBLEM
I	2	1	1	1	-	1
II	1	1	-	1	-	-
III	1	1	-	1	-	-
IV	2	1	1	1	1	1
V	1	1	-	1	-	1
<b>TOTAL</b>	<b>7</b>	<b>5</b>	<b>2</b>	<b>5</b>	<b>1</b>	<b>3</b>
<b>SECTION A - 12</b>			<b>SECTION B - 7</b>		<b>SECTION C - 4</b>	

**CORE - X**  
**PAPER TITLE: BUSINESS LAWS**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS: 100</b>
<b>SEMESTER: IV</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS : 75</b>

**COURSE FRAMEWORK:**

Introduction to the provisions of General Contract and Special Contracts related to Business.

**COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Inherit the knowledge on the legal aspects involved in Indian Contract Act.
2. Understand the concept of Offer, Acceptance and Consideration.
3. Impart the performance of contract as per Indian Contract Act, 1872.
4. Create and demonstrate the knowledge about sale of goods Act 1930.
5. Understand the Contemporary Issues in Business Law such as Right to Information Act, 2005, Information Technology Act and IPR.

**UNIT-I:**

Indian Contract Act -Formation-Nature and Elements of Contract – Classification of Contracts -Contract Vs Agreement- Essentials of a valid contract. **(15 Hours)**

**UNIT-II:**

Offer – Definition – Forms of offer – Requirements of a Valid Offer. Acceptance – Meaning - Legal rules as to a Valid Acceptance. Consideration – Definition – Types - Essentials. Capacity of Parties – Definition – Persons Competent to contract. Free consent – Coercion – Undue Influence – Fraud – Misrepresentation - Mistake. Legality of object - Void agreements Unlawful Agreements. **(15 Hours)**

**UNIT-III:**

Performance of Contracts – Actual Performance – Attempted Performance, Discharge – Remedies for breach of contract – Quasi contract. **(15 Hours)**

**UNIT-IV:**

Sale of Goods Act- Formation of contract of sale-Passing of property in goods- Performance of contract of sale. **(15 Hours)**

**UNIT-V :**

Contemporary Issues in Business Law- Right to Information Act, 2005 - Meaning of 'Information', Right to Information-Need for Right to Information. Public Information - Request for obtaining information. Information Technology Act - Purpose and significance. Cyber Crimes - Types of crimes, nature and punishment & Penalty- Intellectual Property Law - Patent, trademark, copyright-Registration/ Infringement **(15 Hours)**

**REFERENCE BOOKS:**

2. Business Laws- N.D. Kapoor , Sultan Chand and Sons
3. Business Laws – M.R. Sreenivasan , Margam Publications
4. Business Laws – M.V. Dhandapani, Sultan Chand ad Sons
5. Mercantile Law – S. Badre Alam and P. Saravanavel
6. Business Law – R.S.N. Pillai – S. Chand
7. Mercantile Law – Gogna, S. Chand.

**WEBLINKS:**

1. <https://books.google.co.in/books?isbn=0764142402>
2. <https://books.google.co.in/books?isbn=0748766472>
3. <https://books.google.co.in/books?isbn=0748766774>

**QUESTION PAPER PATTERN:****Max. Marks: 100**

Section	Question Component	Numbers	Marks	Total
<b>A</b>	<b>Definition/Principle</b> Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	<b>Short Answer</b> Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	<b>Essay</b> Answer any 4 out of 6 questions (each in 600 words)	20-25	10	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**DISTRIBUTION OF QUESTIONS:**

Section	Units	No. of Questions	
		Theory	Problems
<b>A</b>	Unit – 1	3	
	Unit – 2	3	
	Unit – 3	2	
	Unit – 4	2	
	Unit – 5	2	
<b>B</b>	Unit – 1	2	
	Unit – 2	2	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	
<b>C</b>	Unit – 1	2	
	Unit – 2	1	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	

## CORE - XI

### PAPER TITLE: – PROGRAMMING IN C++

<b>SUBJECT CODE:</b>	<b>THEORY</b>	<b>MARKS: 100</b>
<b>SEMESTER: IV</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS : 90</b>

#### **COURSE FRAMEWORK:**

Introduction to the basic concepts of C++ Programming to acquire knowledge in OOPs concept.

#### **COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Design to understand the Principles of OOPs and basics of C++
2. Identify and design classes, objects, members of a class and relationships among them needed for a specific problem
3. Develop and implement the various inheritance techniques and Polymorphism
4. Apply the concepts of I/O Operations to Open, Close and Manipulation of Files
5. Develop and implement the Class Templates using Standard Template Library

#### **UNIT I**

**(18 hours)**

**Principles of Object Oriented Programming (OOP):** Basic Concepts of OOP, Benefits of OOP, Application of OOP. Tokens, Keywords, Identifiers and Constants, C++ data types, Variables, Operators in C++ : Scope resolution operator, Member de-referencing Operators, Memory Management Operators, Manipulators, Type cast operators, Expressions and Control Structures.

#### **UNIT II**

**(18 hours)**

**Class and Objects:** Introduction, Specifying a Class, Defining member Functions, C++ Program with Class, Nesting of Member functions, Private member functions, Memory Allocation for Objects, Static Data members, Static Member Functions, Arrays within a Class, Arrays of Objects, Objects as Function Arguments, Friendly Functions, Returning Objects.

**Pointers:** Declaration and initializing, Manipulation of pointers, pointers Expression and Pointer Arithmetic, Pointer with Arrays, Arrays of Pointers, Pointers to objects, this pointers, Arrays of Pointers to Objects

**Constructors and Destructors:** Constructors, Parameterized Constructors, Multiple Constructors in a class, Copy constructor, Destructors. Operator overloading Defining Operator Overloading, Overloading Unary Operators, Overloading Binary Operators, Type Conversions.

#### **UNIT III**

**(18 hours)**

#### **Inheritance and Polymorphism:**

Introduction, Defining Derived Classes, Single inheritance, Multiple inheritance, Hierarchical inheritance, Multilevel inheritance, Hybrid inheritance, Virtual Base Classes, Polymorphism, static and dynamic binding, Constructor in Derived Classes, Pointers to Derived Classes, Virtual Functions, Pure Virtual Functions.

**UNIT IV****(18 hours)**

**I/O Operations and Files:** C++ Stream Classes, Unformatted I/O Operations, Formatted I/O operations, Classes for File Streams, Opening and Closing a File : open() and close() functions, Manipulators of File Pointers : seekg(), seekp(), tellg(), tellp() functions, Sequential Input and output Operations : put (), get(), write(), read() functions, Error handling File Operations : eof(), fail(), bad(), good() .

**UNIT V****(18 hours)**

**Class templates:** Using a class template, function templates, Class template specialization, Template with parameters. **Standard Template library:** Containers, iterators and application of container classes. **Exception handling:** Throwing an exception, catching an exception: The try block, Exception handlers.

**PRESCRIBED BOOKS:**

1. E. Balagurusamy,1995,Object Oriented Programming with C++, Tata McGraw-Hill Publishing Company Ltd.

**REFERENCE BOOKS:**

1. Robert Lafore, Object Oriented Programming in Microsoft C++, Galgotia publication.
2. H.Schildt, C++,1998,The Complete Reference-1998-TMH Edition, 1998
3. Barbara Johnston, C++ Programming today, Pearson education/Prentice-Hall of India,ISBN81-317-1079-3, 2007.
4. Steve Oualline, Practical C++ programming, O'Reilly/Shroff publishers & distributors,ISBN81-7366-682-2.

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks: 100**

<b>Section</b>	<b>Question Component</b>	<b>Numbers</b>	<b>Marks</b>	<b>Total</b>
<b>A</b>	<b>Definition/Principle</b> Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	<b>Short Answer</b> Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	<b>Essay</b> Answer any 4 out of 6 questions (each in 600 words)	20-25	10	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**DISTRIBUTION OF QUESTIONS:**

<b>Section</b>	<b>Units</b>	<b>No. of Questions</b>	
		<b>Theory</b>	<b>Problems</b>
<b>A</b>	Unit – 1	3	
	Unit – 2	3	
	Unit – 3	2	
	Unit – 4	2	
	Unit – 5	2	
<b>B</b>	Unit – 1	2	
	Unit – 2	2	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	
<b>C</b>	Unit – 1	2	
	Unit – 2	1	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	

## CORE - XII

### PAPER TITLE: PRACTICAL - PROGRAMMING IN C++ LAB

<b>SUBJECT CODE :</b>	<b>PRACTICAL</b>	<b>MARKS: 100</b>
<b>SEMESTER: IV</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS : 75</b>

#### **COURSE FRAMEWORK:**

This course trains the students to solve the problems using C++ language.

#### **COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Identify and design classes, objects, members of a class and relationships among them needed for a specific problem
2. Design reusable programs using the concepts of interfaces, packages.
3. Apply the concepts of Inheritance and Overloading to develop efficient and error free codes.
4. Develop programs to implement Formatted I/O operations
5. All types and Basic and Advance Programs to enhance the core concept in programming.

#### **Programs:**

1. Program to print average of n integers.
2. Program to illustrate call by value & call by reference.
3. Program to multiply two matrices.
  - a. **Class**
4. Student Mark Sheet preparation using Class
5. Class and Object Implementation: to display item and cost
  - a. **Constructor and Destructor**
6. Constructor and Destructor implementation
  - a. **Inline function and friend function**
7. To multiply and divide two floating point numbers using inline function
8. To swap private data of two classes using friend function
  - a. **Polymorphism**
9. Function Overloading
10. Overloading unary minus
11. Overloading binary operators - Complex number addition
  - a. **Inheritance**
12. Single inheritance
13. Multilevel inheritance
  - a. **Streams**
14. Program to implement Formatted I/O operations.
15. Reading and writing a class object using file

**ALLIED - IV**  
**PAPER TITLE: MARKETING MANAGEMENT**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS: 100</b>
<b>SEMESTER: IV</b>	<b>CREDITS: 5</b>	<b>NO. OF HOURS : 90</b>

**COURSE FRAMEWORK:**

An introduction and implementation of marketing concepts and strategies.

**COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Demonstrate strong conceptual knowledge in the functional area of marketing management.
2. Learn about marketing process, Buyer Behavior Process and Market Segmentation.
3. Analyse various products, life cycle and New Product development process.
4. Understand working of marketing channels and communication process.
5. Illustrate the E-Marketing, Consumerism, Market Research, MIS and Marketing Regulations.

**UNIT-I (18 hours)**

Marketing- Introduction – Meanings – Definition – Functions – Role and importance – Kinds of Market – Marketing Managements – Marketing Process – Marketing Management orientation marketing Plan – Marketing Mix.

**UNIT –II (18 hours)**

Marketing Environment – Managing Marketing information – Consumer Markets – Consumer Buying Decision Process – Business Markets – Business Buyer Behaviour Process – Market Segmentation.

**UNIT –III (18 hours)**

Product – Types of Products – Product Mix – New Product Development – Product Life Cycle Strategy, Pricing – Pricing Objectives – Kinds of Pricing – Factors Affecting Pricing – Pricing Strategies.

**UNIT – IV (18 hours)**

Marketing Channels – Functions – Types – Event Management –Channel design management channel behaviour; Marketing Communication Mix – Communication Process – Steps in Developing Effective Marketing Communication – Setting Promotion Budget and Mix

**UNIT – V (18 hours)**

Competitor Analysis and Strategies – Social Responsibility and Ethics –Recent Trends in Marketing: A Basic understanding of E-Marketing, Consumerism, Market Research, MIS and Marketing Regulations.

**PRESCRIBED BOOKS:**

Prescribed Texts:

1. Marketing Management by Sontakki C.N; Kalyani Publishers; 2009
2. R.S.N. Pillai and Bagavathi, Modern Marketing, S.Chand& Co, New Delhi.
3. Jayasankar, Marketing, Margham publications, Chennai.

**REFERENCE BOOKS:**

1. Philip Kotler, 2003, Marketing Management, 11th edition, Pearson Education (Singapore) Pt Ltd, New Delhi.
2. Crrain field, Marketing Management, Palgrave Macmillan

**WEBLINKS:**

1. <https://books.google.co.in/books?isbn=0764112775>
2. <https://books.google.co.in/books?isbn=0324591098>
3. <https://books.google.co.in/books?isbn=0415380804>

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks: 100**

Section	Question Component	Numbers	Marks	Total
<b>A</b>	<b>Definition/Principle</b> Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	<b>Short Answer</b> Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	<b>Essay</b> Answer any 4 out of 6 questions (each in 600 words)	20-25	10	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**DISTRIBUTION OF QUESTIONS:**

Section	Units	No. of Questions	
		Theory	Problems
<b>A</b>	Unit – 1	3	
	Unit – 2	3	
	Unit – 3	2	
	Unit – 4	2	
	Unit – 5	2	
<b>B</b>	Unit – 1	2	
	Unit – 2	2	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	
<b>C</b>	Unit – 1	2	
	Unit – 2	1	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	

## SOFT SKILLS – IV

### PAPER TITLE: QUANTITATIVE APTITUDE

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS: 100</b>
<b>SEMESTER: IV</b>	<b>CREDITS: 3</b>	<b>NO. OF HOURS : 30</b>

#### **COURSE FRAMEWORK:**

- To develop knowledge on Aptitude Concepts

#### **UNIT I (6 hours)**

Divisibility – HCF and LCM – Decimal Fractions – Square roots and Cube Roots –  
Logarithms – Antilogarithms.

#### **UNIT II (6 hours)**

Averages – Percentage – Profit and Loss - Ratio and Proposition – Partnership –  
Alligation and mixture.

#### **UNIT III (6 hours)**

Time and work – Pipes and Cistern – Time and Distance – Boats and Streams.

#### **UNIT IV (6 hours)**

Simple Interest – Compound Interest – Stocks and Shares – True Discount – Banker's  
discount.

#### **UNIT V (6 hours)**

Area – Volume and surface Areas – Heights and Distances – Data Interpretation :  
Tabulation – Bar Graphs – Pie Charts – Line Graphs.

#### **REFERENCE BOOKS:**

1. R.S. Aggarwal, Objective Arithmetic , S. Chand & Company, New Delhi , 2005
2. Govind Prasad Singh and Rakesh Kumar, Text Book of Quickest Mathematics (for all  
Competitive Examinations), Kiran Prakashan, 2012
3. R.S. Aggarwal, Quantitative Aptitude, S. Chand & Company, New Delhi, 2012

## ENVIRONMENTAL STUDIES

<b>SUBJECT CODE:</b>	<b>THEORY</b>	<b>MARKS 100</b>
<b>SEMESTER: IV</b>	<b>CREDITS: 2</b>	<b>TOTAL HOURS: 30</b>

### **COURSE FRAMEWORK:**

- This course introduces the concepts of Environmental Studies.

### **COURSE OUTCOME:**

On completion of the course the students will be able

1. To know the importance of environmental studies and methods of conservation of natural resources.
2. To describe the structure and function of an ecosystem.
3. To identify the values and conservation of bio-diversity.
4. To explain the causes, effects and control measures of various types of pollutions.
5. To select the appropriate methods for waste management.

### **Unit-1: (6 Hours)**

**Multidisciplinary nature of environmental studies** Definition, scope and importance.

### **Unit-2: (6 Hours)**

**Natural Resources: Renewable and non-renewable resources: Natural** resources and associated problems. - Forest resources: Use and over-exploitation, deforestation, case studies. - Timber extraction, mining, dams and their effects on forest and tribal people. - Water resources: Use and over- utilization of surface and ground water - floods, drought, conflicts over water, dams- benefits and problems. - Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies. - Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources. Case studies. Land resources: Land as a resource, 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.

### **Unit-3: (6 Hours)**

**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:- . Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

**Unit-4:****(6 Hours)****Biodiversity and its conservation**

- Introduction – Definition: genetic, species and ecosystem diversity. – Bio geographical classification of India - Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic- and option values - Biodiversity at global, National and local levels. - India as a mega- diversity nation - 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.

**Unit-5:****(6 Hours)****Environmental Pollution**

## Definition

- Cause, 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 of urban and industrial wastes.
- Role of an individual in prevention of pollution.
- Pollution case studies.
- Disaster management: floods, earthquake, cyclone and landslides.

**PRESCRIBED BOOKS:**

1. Agarwal, K.C. 2001 Environmental Biology, Nidi Publ. Ltd. Bikaner.

**REFERENCE BOOKS:**

1. Cunningham, W.P.Cooper, T.H. Gorhani, E & Hepworth, M.T.2001, Environmental Encyclopedia, Jaico Publ. House, Mumbai, 1196p.

# **Semester -V**

**CORE - XIII**  
**PAPER TITLE: INCOME LAW AND PRACTICE - I**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: V</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS : 90</b>

**COURSE FRAMEWORK:**

An introduction to the basic concepts of Income Tax and to acquaint knowledge with provisions relating to Salary, House Property, Business or Professional Income and Filing of Returns.

**COURSE OUTCOMES:**

At the end of this course, the students will be able to

1. Understand the basic concepts & definitions under the Income Tax Act,1961.
2. Compute salary income under the head salaries.
3. Learn the concepts of Annual value associated deductions & the calculation of income from House property.
4. Compute the income from Business & Profession.
5. Ascertain the residential status of an assessee and its incidence of tax.

**Unit-I**

**(18 Hours)**

Meaning and features of income- Important definitions under the Income Tax Act- Residential Status – Scope of Total income – Incomes exempt from tax.

**Unit-II**

**(18 Hours)**

Heads of income – Salaries – Allowances – Perquisites and their valuations – Deductions from salary – Gratuity – Pension – Commutation of pension – Leave salary – Profits-in-lieu of salary – Provident funds – Deductions under section 80C.

**Unit-III**

**(18 Hours)**

Income from House property – Definition of Annual value – Computation of Income under different circumstances.

**Unit-IV**

**(18 Hours)**

Income from Business or Profession- Allowable and not allowable expenses – General deductions – Provisions relating to depreciation – Deemed business profits- Compulsory maintenance of books of accounts – Audit of accounts of certain persons – Special provision for computing incomes on estimated basis – computation of income from business or profession.

**Unit-V**

**(18 Hours)**

Tax Rates of Individual Assessee – Filing of Return – Various Return Forms – Permanent Account Number (PAN) – Advance payment of Tax – Meaning of Due date – Meaning of Deduction of Tax at Source.

**Proportion of theory and problems: 20% and 80%**

**REFERENCE BOOKS:**

1. Students Guide to Income Tax – Dr. Vinod K. Singhania, Taxman Publications Pvt. Ltd.
2. Income Tax Law & Accounts, Dr. Mehrotra & Goyal Sahitya Bhavan Publications.
3. Income Tax Law & Practice V.P. Gaur & D.B. Narang Kalyani Publishers.
4. Income Tax Theory, Law & Practice – T.S. Reddy and Y Hariprasad Reddy Margham Publications.

**WEBLINKS:**

1. <https://books.google.com/books?isbn=1584773855>
2. <https://books.google.com/books?id=iiQKAAAAMAAJ>
3. <https://books.google.com/books?isbn=813172191>

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks: 100**

Section	Question Component	Numbers	Marks	Total
<b>A</b>	Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	Answer any 2 out of 4 questions (each in 1200 words)	20-23	20	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**Break up of questions for theory and problem**

UNITS	SECTION A		SECTION B		SECTION C	
	THEORY	PROBLEM	THEORY	PROBLEM	THEORY	PROBLEM
I	2	1	1	1	-	-
II	1	1	-	1	-	1
III	1	1	-	1	-	1
IV	1	1	1	1	-	1
V	2	1	1	-	1	-
<b>TOTAL</b>	<b>7</b>	<b>5</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>3</b>
<b>SECTION A - 12</b>			<b>SECTION B - 7</b>		<b>SECTION C - 4</b>	

**CORE - XIV**  
**PAPER TITLE: COST AND MANAGEMENT ACCOUNTING**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: V</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS : 90</b>

**COURSE FRAMEWORK:**

Introduction to the concepts of Cost and Management Accounting

**COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Discuss and describe the purpose of Cost and Management Accounting and to communicate the elements of Cost and preparation of Cost Sheet.
2. Assess the basic concepts and processes related to Stores, Inventory Control, Economic Ordering Quantity and the methods of Pricing Materials.
3. Explains the various components of Labour Cost, the needs to control labour Cost and o analyze and compute the basic methods of Remuneration & the various Incentive Schemes.
4. Exposed to Budgetary Control.
5. Gain practical knowledge in Marginal Costing.

**UNIT I**

**(18 Hours)**

Cost Accounting: Definition, Meaning and objectives - Distinction between Cost and Financial Accounting - Elements of cost and preparation of cost sheets - Management Accounting – Definition and objectives – Distinction between management and financial accounting.

**UNIT II**

**(18 Hours)**

Stores Records - Purchase Order - Goods Received Note - Bin Card - Stores Ledger - Purchase, Receipt and Inspection - Inventory Control - Economic Ordering Quantity - Methods of Pricing Issued. (FIFO-LIFO-Weighted Average Method Only)

**UNIT III**

**(18 Hours)**

Labour Cost: Meaning – Types of Labour – objectives – Labour Turnover - Time Rate System – Piece Wage system – Taylor’s differential Piece Rate System – Premium and Bonus Plans – The Halsey Premium Plan – Rowan Plan. (Simple problems only)

**UNIT IV**

**(18 Hours)**

Budgetary Control: Meaning – Definition – Advantages and Limitations – Essentials of a good budgetary control system - Classification of Budgets – Problems on sales Budget, Production Budget, Cash budget, Fixed budget and Flexible Budget only.

**UNIT V**

**(18 Hours)**

Marginal Costing: The Concept - Break Even Analysis - Break - Even Chart - Importance and assumptions - Application of Profit Volumes Ratio - Different types of simple problems only.

**REFERENCE BOOKS:**

1. Wheldon A.J., Cost Accounting and Costing Methods.
2. Iyengar S.P., Cost Accounting : Principles and Practice.
3. Bhar B.K., Cost Accounting : Methods and problems.
4. Bigg W.W., Cost Accounts.
5. Prasad N.K, Cost Accounting : Principles and Problems.
6. Jain S.P. and Narang K.L., Advanced Cost Accounting.
7. Agarwal M., Theory and Practices of Cost Accounting
8. Robert Anthony : Management Accounting : Text and cases.
9. Maheswari S.N., Principles of Management Accounting.

**WEBLINKS:**

1. <https://books.google.co.in/books?isbn=0070402248>
2. <https://books.google.co.in/books?isbn=8189781502>
3. <https://books.google.co.in/books?isbn=9380901666>

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks: 100**

Section	Question Component	Numbers	Marks	Total
<b>A</b>	Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	Answer any 2 out of 4 questions (each in 1200 words)	20-23	20	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**Break up of questions for theory and problem**

UNITS	SECTION A		SECTION B		SECTION C	
	THEORY	PROBLEM	THEORY	PROBLEM	THEORY	PROBLEM
I	3	-	1	-	1	-
II	1	1	1	1	-	1
III	1	1	-	1	-	1
IV	2	1	1	1	-	1
V	1	1	-	1	-	-
<b>TOTAL</b>	<b>8</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>3</b>
<b>SECTION A - 12</b>			<b>SECTION B - 7</b>		<b>SECTION C - 4</b>	

## CORE - XV

### PAPER TITLE: DATABASE MANAGEMENT SYSTEMS

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: V</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS : 90</b>

#### **COURSE FRAMEWORK:**

Introduction to the concepts of Cost and Management Accounting

#### **COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Construct the Data Types and Class Diagrams for designing a database.
2. Develop the query processing and optimizations techniques for designing a database.
3. Design the Forms and Reports for a Complete database.
4. Propose concurrency and recovery control for parallel and distributed systems
5. To understand the different stages of Database Administration.

#### **UNIT-1:**

**(18 Hours)**

Advantages and Components of a Database Management Systems – Feasibility Study – Class Diagrams – Data Types – Events – Normal Forms – Integrity – Converting Class Diagrams to Normalized Tables – Data Dictionary.

#### **UNIT-2:**

**(18 Hours)**

Query Basics – Computation Using Queries – Subtotals and GROUP BY Command – Queries with Multiple Tables – Subqueries – Joins – DDL & DML – Testing Queries

#### **UNIT-3:**

**(18 Hours)**

Effective Design of Forms and Reports – Form Layout – Creating Forms – Graphical Objects – Reports – Procedural Languages – Data on Forms – Programs to Retrieve and Save Data – Error Handling.

#### **UNIT-4:**

**(18 Hours)**

Power of Application Structure – User Interface Features – Transaction – Forms Events – Custom Reports – Distributing Application – Table Operations – Data Storage Methods – Storing Data Columns – Data Clustering and Partitioning.

#### **UNIT-5 :**

**(18 Hours)**

Database Administration – Development Stages – Application Types – Backup and Recovery – Security and Privacy – Distributed Databases – Client/Server Databases – Web as a Client/Server System – Objects – Object Oriented Databases – Integrated Applications.

#### **PRESCRIBED BOOKS:**

1. G. V. Post – Database Management Systems Designing and Building Business Application – McGraw Hill International edition – 1999.

**REFERENCE BOOKS:**

- 1.Raghu Ramakrishnan – Database Management Systems – WCB/McGraw Hill – 1998.
- 2.C.J. Date – An Introduction to Database Systems – 7<sup>th</sup> Edition – Addison Wesley - 2000.

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks: 100**

Section	Question Component	Numbers	Marks	Total
<b>A</b>	<b>Definition/Principle</b> Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	<b>Short Answer</b> Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	<b>Essay</b> Answer any 4 out of 6 questions (each in 600 words)	20-25	10	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**DISTRIBUTION OF QUESTIONS:**

Section	Units	No. of Questions	
		Theory	Problems
<b>A</b>	Unit – 1	3	
	Unit – 2	3	
	Unit – 3	2	
	Unit – 4	2	
	Unit – 5	2	
<b>B</b>	Unit – 1	2	
	Unit – 2	2	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	
<b>C</b>	Unit – 1	2	
	Unit – 2	1	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	

**CORE - XVI**  
**PAPER TITLE: PRACTICAL - RDBMS USING VB. NET LAB**

<b>SUBJECT CODE :</b>	<b>PRACTICAL</b>	<b>MARKS : 100</b>
<b>SEMESTER: V</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS : 75</b>

**COURSE FRAMEWORK:**

Introduction to the Practical concepts of RDBMS using VB. NET to Understand Internet Technology to develop dynamic webpages using web technology.

**COURSE OUTCOMES:**

On completion of the course the students will be able:

1. To understand .NET Framework and describe some of the major enhancements to the new version of Visual Basic.
2. To describe the basic structure of a Visual Basic.NET project and use main features of the integrated development environment (IDE)
3. To create applications using Microsoft Windows Forms
4. To create applications that use hyperlinks and File holding
5. Construct Database using MS-Access

**PROGRAMS**

1. Create a button-click option to display a Welcome message
2. Create mouse move over to change button color
3. Create a program to perform all arithmetic operations.
4. Create an application to change the forecolor of a label box to Red, Green and Blue colors using Radio Button control.
5. Create an application to format label box text into bold, italic and underline using checkbox control Create a VB.NET program for Feedback form
6. Create a VB.NET for displaying the images with clear option
7. Creating a file holding variables, hyperlinks with lock & unlock methods

**MS-Access**

For the following programs, create a database and perform the required operations given below:

Use a Menu / Button for the following operations

- a. Navigation of records
  - b. Insertion
  - c. Deletion
  - d. Modification
  - e. Generate simple reports using queries.
10. Telephone directory maintenance.
  11. Payroll.
  12. Invoice System.
  13. Mark sheet Processing.
  14. Inventory System.
  15. Library information system

**ELECTIVE - I**  
**PAPER TITLE: ENTREPRENEURIAL DEVELOPMENT**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: V</b>	<b>CREDITS: 5</b>	<b>NO. OF HOURS : 90</b>

**COURSE FRAMEWORK:**

An introduction to Entrepreneurship and inculcate values of entrepreneurship and develop entrepreneurial qualities to become successful entrepreneurs.

**COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Discuss the concept of entrepreneurship and its importance.
2. Analyze the scope of various financial institutions for the enhancement of small entrepreneurs.
3. Understand the working of SSI.
4. Handling projects and Project Management.
5. Communicate the important values of EDPs and the Government role played in ED.

**Unit- I**

**(18 Hours)**

Concept of Entrepreneurship- Entrepreneurship – Meaning – Types – Qualities of an Entrepreneur – Classification of Entrepreneurs – Factors influencing Entrepreneurship – Functions of Entrepreneurs- Role of Entrepreneur in Economic development.

**Unit -II**

**(18 Hours)**

Entrepreneurial Development Agencies. Commercial Banks – District Industries Centre – National Small Industries Corporation – Small Industries Development Organization – Small Industries Service Institute. All India Financial Institutions – IDBI – IFCI – ICICI – IRDBI

**Unit -III**

**(18 Hours)**

Small Scale Industries- SSI- Tiny industries, Ancillary Industries, Cottage industries- meaning- product range- capital investment- importance and role played by SSI in the development of Indian Economy- Problems faced by SSI's- Steps taken to solve the problems- policies governing SSI's.

**Unit- IV**

**(18 Hours)**

Project Management- Business idea generation techniques – Identification of Business opportunities – Feasibility study – Marketing, Finance, Technology & Legal Formalities -Preparation of Project Report – Tools of Appraisal.

**Unit -V****(18 Hours)**

Entrepreneurial Development Programmes (EDP) – Role, relevance and achievements – Role of Government in organizing EDPs – Critical evaluation- Women entrepreneurship- problems – steps taken by government- participation of women in SSI sector.

**REFERENCE BOOKS:**

1. Srinivasan N.P. – Entrepreneurial Development
2. Saravanavel – Entrepreneurial Development
3. Jayashree Suresh – Entrepreneurial development
4. J.S. Saini & S.I. Dhameja – Entrepreneurship and small business.
5. Vasant Desai, Appannaiah, Reddy, Gopala Krishna- Entrepreneurship Development programme- Himalaya Publication House
6. Dr. C.B. Gupta & Dr. S.S. Khanka – Entrepreneurship and Small Business.

**WEBLINKS:**

1. <https://books.google.co.in/books?isbn=8122414346>
2. <https://books.google.co.in/books?isbn=8170991153>
3. <https://books.google.co.in/books?isbn=8121918014>

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks: 100**

<b>Section</b>	<b>Question Component</b>	<b>Numbers</b>	<b>Marks</b>	<b>Total</b>
<b>A</b>	<b>Definition/Principle</b> Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	<b>Short Answer</b> Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	<b>Essay</b> Answer any 4 out of 6 questions (each in 600 words)	20-25	10	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**DISTRIBUTION OF QUESTIONS:**

<b>Section</b>	<b>Units</b>	<b>No. of Questions</b>	
		<b>Theory</b>	<b>Problems</b>
<b>A</b>	Unit – 1	2	
	Unit – 2	3	
	Unit – 3	2	
	Unit – 4	2	
	Unit – 5	3	
<b>B</b>	Unit – 1	2	
	Unit – 2	1	
	Unit – 3	2	
	Unit – 4	1	
	Unit – 5	1	
<b>C</b>	Unit – 1	1	
	Unit – 2	1	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	2	

**ELECTIVE - I**  
**PAPER TITLE: PRODUCTION & SUPPLY CHAIN MANAGEMENT**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: V</b>	<b>CREDITS: 5</b>	<b>NO. OF HOURS : 90</b>

**COURSE FRAMEWORK:**

An Introduction about Production and Supply chain management (SCM) in managing the complete production and flow of goods or services to improve quality, delivery, customer experience and cost-efficiency.

**COURSE OUTCOME:**

On completion of the course the students will be able:

1. Understand the importance of production management.
2. Analyze the differences between Production planning and Control.
3. Discuss in detail about Productivity and Quality control.
4. Explain about the functions of SCM.
5. Understand the difference between logistics management and SCM.

**UNIT I PRODUCTION MANAGEMENT (18 Hours)**

Introduction, objectives, importance of production management, meaning and types of Production System; plant location; factors affecting locations, plant layout; meaning, objectives, types.

**UNIT II PRODUCTION PLANNING AND CONTROL (18 Hours)**

Meaning, Objectives, Scope, Importance & Procedure of Production Planning, Routing scheduling, factors affecting scheduling, Dispatch & Follow up, Production Control- Meaning, objectives, Factors affecting Production Control.

**UNIT III PRODUCTIVITY & MAINTENANCE (18 Hours)**

Productivity Meaning, Importance, Factors affecting Productivity, Quality Control meaning, objectives, control charts (mean chart, range chart only) Maintenance- meaning, objectives, types.

**UNIT IV SUPPLY CHAIN MANAGEMENT (18 Hours)**

Meaning and definition- Objectives of SCM- components of SCM, SCM process, Factors driving the SCM –supply chain planning, push/pull strategy, bullwhip effect.

**UNIT V LOGISTICS MANAGEMENT (18 Hours)**

Meaning and definition – significant of logistics –concepts of logistics management – objectives of logistics management – elements of logistics management – logistics management v/s supply chain management.

**PRESCRIBED BOOKS:**

1. S.Shankaran, “ Managerial Economics”, Margham Economics, Chennai,2008.
2. R.Cauvery & Others – Managerial Economics. S. Chand And Company, New Delhi, 2015.

**REFERENCE BOOKS:**

1. S.Mukherjee, "Business And Managerial Economics in global Context", New Central Bank Agency (P) Ltd, Kolkatta, 2009.
2. William F. Samuelson and Stephen G. Marks, "Managerial Economics", Johny Wiley & Sons, Reprint – 2015

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks: 100**

<b>Section</b>	<b>Question Component</b>	<b>Numbers</b>	<b>Marks</b>	<b>Total</b>
<b>A</b>	<b>Definition/Principle</b> Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	<b>Short Answer</b> Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	<b>Essay</b> Answer any 4 out of 6 questions (each in 600 words)	20-25	10	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**DISTRIBUTION OF QUESTIONS:**

<b>Section</b>	<b>Units</b>	<b>No. of Questions</b>	
		<b>Theory</b>	<b>Problems</b>
<b>A</b>	Unit – 1	3	
	Unit – 2	2	
	Unit – 3	2	
	Unit – 4	2	
	Unit – 5	3	
<b>B</b>	Unit – 1	2	
	Unit – 2	1	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	2	
<b>C</b>	Unit – 1	1	
	Unit – 2	1	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	2	

**ELECTIVE I**  
**PAPER TITLE: BUSINESS INFORMATION SYSTEM**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: V</b>	<b>CREDITS: 5</b>	<b>NO. OF HOURS : 90</b>

**COURSE FRAMEWORK:**

An Introduction to computing for business and management, data warehousing, database languages, e-business software technologies, web and interactive media design.

**COURSE OUTCOME:**

On completion of the course the students will be able:

1. Develop an understanding of fundamental concepts and key principles in the area of Management Information Systems.
2. Understand the Hardware, Software and Groupware.
3. The ability to use knowledge and skills related to digital technologies to enhance business administration and decision making.
4. Apply of information systems at the operational, tactical & strategic levels.
5. Learn the Role & Responsibility of IS professionals and ethical issues.

**UNIT I Introduction to Information Systems (18 Hours)**

Introduction to organisation- decision levels- managerial roles- information needs of managements- information system- decision- features- systems concepts- framework for information systems- strategic uses of management information systems- future of IS in an organization – business process reengineering.

**UNIT II Information System Components (18 Hours)**

Hardware- input and output devices- n computer memory (primary, secondary & cache)- memory access time- file structures- network components. -software- operating system software application software- groupware- multiprogramming- multi tasking. Database- definition- data capture- data integrity- components of database management systems.

**UNIT III Integration of Information Systems (18 Hours)**

Distributed processing- centralized data processing – decentralized data processing distributed- database- client server computing- internet- intranet- electronic conferencing transaction processing systems- office automation systems- knowledge management systems decision support systems (features, components & tools)- group decision support systems expert systems (components & advantages) – case studies.

**UNIT IV Application of Information Systems in Business Areas (18 Hours)**

Application of information systems at the operational, tactical & strategic levels in the areas of accounting & finance, marketing, human resources and production.

**UNIT V Management of Information Systems****(18 Hours)**

Information systems security- risks threats- protection of information systems. Role & responsibility of IS professionals- ethical issues.

**PRESCRIBED BOOKS:**

1. Robert Schulthesis, Mary Summer, "Management Information Systems- The Managers View", Tata Mc Graw hill Publication.
2. SystemsGeral v Post David, L Anderson, "Management Information", Tata Mc Graw hill.

**REFERENCE BOOKS:**

1. Jaiswal. S, "Management Information Systems", Tata Mc Graw hill Publication.
2. O Brien, "Management Information Systems", Tata Mc Graw hill.

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks: 100**

Section	Question Component	Numbers	Marks	Total
<b>A</b>	<b>Definition/Principle</b> Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	<b>Short Answer</b> Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	<b>Essay</b> Answer any 4 out of 6 questions (each in 600 words)	20-25	10	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**DISTRIBUTION OF QUESTIONS:**

Section	Units	No. of Questions	
		Theory	Problems
<b>A</b>	Unit – 1	3	
	Unit – 2	2	
	Unit – 3	2	
	Unit – 4	2	
	Unit – 5	3	
<b>B</b>	Unit – 1	3	
	Unit – 2	1	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	
<b>C</b>	Unit – 1	2	
	Unit – 2	1	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	

**PAPER TITLE: VALUE EDUCATION**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: V</b>	<b>CREDITS: 2</b>	<b>NO. OF HOURS : 15</b>

**COURSE FRAMEWORK:**

- To teach and inculcate the importance of value based living.
- To give students a deeper understanding about the purpose of life.

**COURSE OUTCOME:**

On completion of the course the students will be able

1. To inculcate the value system in their real life scenarios.
2. To implement the role of culture and civilization, roles and responsibilities in the society.
3. To effectively follow Salient values for life such as forgiveness, ability to sacrifice, self-esteem, teamwork and creative thinking.
4. To reflect the human rights, social values and welfare of the citizen.
5. To consider the relation between values and personal behavior affecting the achievement of a sustainable future.

**Unit 1: Education and Values**

**(3 Hours)**

Definition, Concept, Classification, Theory, Criteria and Sources of values Aims and objectives of value education Role and Need for value education in the contemporary society, Role of education in transformation of values in society Role of parents, teachers, society, peer group and mass media in fostering values

**Unit 2: Value Education and Personal Development**

**(3 Hours)**

Human Values: Truthfulness, Sacrifice, Sincerity, Self-Control, Altruism, Scientific Vision, relevancy of human values to good life. Character Formation towards Positive Personality Modern challenges of adolescents: emotions and behavior Self-analysis and introspection: sensitization towards gender equality, differently abled, Respect for - age, experience, maturity, family members, neighbors, strangers, etc.

**Unit 3: Human Rights and Marginalized People**

**(3 Hours)**

Concept of Human Rights – Principles of human rights – human rights and Indian constitution –Rights of Women and children – violence against women – Rights of marginalized People – like women, children, minorities, transgender, differently abled etc Social Issues and Communal Harmony Social issues – causes and magnitude - alcoholism, drug addiction, poverty, unemployment – communal harmony –concept –religion and its place in public domain –secular civil society

**Unit 4: Value Education towards National and Global Development (3 Hours)**

Constitutional Values:(Sovereign, Democracy, Socialism, Secularism, Equality, Justice, Liberty, Freedom, Fraternity)

Social Values: (Pity and Probity, Self-Control, Universal Brotherhood).

Professional Values:(Knowledge Thirst, Sincerity in Profession, Regularity, Punctuality, Faith). Religious and Moral Values: (Tolerance, Wisdom, character).

Aesthetic Values: (Love and Appreciation of literature, fine arts)

Environmental Ethical Values

National Integration and international understanding.

Need of Humanistic value for espousing peace in society. Conflict of cross-cultural influences, cross-border education

**Unit 5: (3 Hours)**

Guru Nanak Devji's Teachings

Relevance of Guru Nanak Devji's teachings' relevance to Modern

Society The Guru Granth sahib

The five Ks

Values and

beliefs

Rights and freedom (Right of equality, Right to Education, Right to Justice, Rights of women, Freedom of religion, Freedom of culture, Freedom of assembly, Freedom of speech) Empowerment of women

Concept of Langar

Eminent Sikh

personalities

**REFERENCES**

- 1.Dr.Abdul Kalam. My Journey-Transforming Dreams into Actions. Rupa Publications, 2013.
- 2.Steven R Covey, 8<sup>th</sup> Habit of Effective People (From Effectiveness to Greatness), FreePress, NewYork, 2005.
- 3.Prem Singh, G.J. (2004). 'Towards Value Based Education', University News. Vol. 42 (45): P.11-12.
- 4.V.R. Krishna Iyer. Dialectics & Dynamics of Human Rights in India (Tagore Law Lectures) The Yesterday, Today and Tomorrow, Eastern Law House (1999, Reprint 2018)
- 5.<http://www.ncert.nic.in/rightside/links/pdf/framework/english/nf2005.pdf>

# **Semester - VI**

**CORE - XVII**  
**PAPER TITLE: INCOME LAW AND PRACTICE – II**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: VI</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS : 90</b>

**COURSE FRAMEWORK:**

An introduction to the provisions relating to Capital gains, Income from Other Sources, Deductions, Assessment of Individuals and Powers of Income Tax Authorities.

**COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Compute Income from “Capital Gain” under section 45 to 55, and to analyze the various exemptions under the capital gains
2. Analyze the various provisions contained under section 56 to 59 of the Income tax Act, 1961 under the heads “Income from Other Sources”
3. Outline the various provisions relating to “Aggregation of income” and “Set-Off and Carry Forward of Losses”
4. Prepare gross total income and to analyze the provisions under section 80 C to 80U relating to individuals
5. Understand about Income Tax Authorities and their Powers.

**UNIT- I**

**(18 Hours)**

Income under Capital Gains – Short term, Long term Capital gains – Certain transactions not included as transfer – Cost of Improvement – Indexation of Cost – Exempted Capital Gains- Computation of Capital Gains.

**UNIT-II**

**(18 Hours)**

Income from other sources – Grossing up – Deductions in computing income under the head Income from other sources.

**UNIT-III**

**(18 Hours)**

Clubbing of income – Deemed incomes – Provisions of the Act relating to clubbing of income – Set off – Carry forward and set off of losses.

**UNIT-IV**

**(18 Hours)**

Permissible deductions from gross total income – Sec. 80C, 80CCC, 80CCD, 80D, 80DD, 80DDB, 80E, 80G, 80GGC, 80GG, 80TTA, 80GGA, 80QQB, 80RRB, 80U, – Assessment of individual- Computation of Tax.

**UNIT-V**

**(18 Hours)**

Income Tax Authorities – Powers of the Central Board of Direct Taxes (CBDT) , Commissioners of Income Tax and Income Tax Officers – Self Assessment – Best Judgement Assessment – Income Escaping Assessment (Re assessment).

**Proportion of theory and problems: 20% and 80%**

**REFERENCE BOOKS:**

1. Students Guide to Income Tax – Dr. Vinod K. Singhania, Taxman Publications Pvt. Ltd.
2. Income Tax Law & Accounts, Dr. Mehrotra & Goyal Sahitya Bhavan Publications.
3. Income Tax Law & Practice V.P. Gaur & D.B. Narang Kalyani Publishers.
4. Income Tax Theory, Law & Practice – T.S. Reddy and Y Hariprasad Reddy Margham Publications.

**WEBLINKS:**

1. <https://books.google.com/books?isbn=1584773855>
2. <https://books.google.com/books?id=iiQKAAAAMAAJ>
3. <https://books.google.com/books?isbn=8131721914>

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks: 100**

Section	Question Component	Numbers	Marks	Total
<b>A</b>	Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	Answer any 2 out of 4 questions (each in 1200 words)	20-23	20	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**Break up of questions for theory and problem**

UNITS	SECTION A		SECTION B		SECTION C	
	THEORY	PROBLEM	THEORY	PROBLEM	THEORY	PROBLEM
I	2	1	1	1	-	-
II	1	1	-	1	-	1
III	2	1	-	1	-	1
IV	1	1	1	1	1	-
V	2	-	1	-	1	-
<b>TOTAL</b>	<b>8</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>2</b>
<b>SECTION A - 12</b>			<b>SECTION B - 7</b>		<b>SECTION C - 4</b>	

**CORE - XVIII**  
**PAPER TITLE: HUMAN RESOURCE MANAGEMENT**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: VI</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS : 90</b>

**COURSE FRAMEWORK:**

An Introduction about managing human resources and exposure on human resources practices in organizations.

**COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Explain the importance of Human Resource Management and its Processes concerned with various management activities and to run an effective organization.
2. Outline different methods and techniques of Training and Performance Appraisal that are used in an organization.
3. Assess the different methods and techniques relating to administration and to retain the human resources.
4. Discuss the various mechanisms in Labour Relations.
5. Predict the different faces of executives and preparing policies and practices based on it and Human Resource audit

**UNIT- I** **(18 Hours)**

Nature and scope of Human Resources Management – Differences between personnel management and HRM – Environment of HRM – Human resource planning – Recruitment – Selection – Methods of Selection – Uses of various tests – interview techniques in selection and placement.

**UNIT- II** **(18 Hours)**

Induction – Training – Methods – Techniques – Identification of the training needs – Training and Development – Performance appraisal – Transfer – Promotion and termination of services – Career development.

**UNIT- III** **(18 Hours)**

Remuneration – Components of remuneration – Incentives – Benefits – Motivation – Welfare and social security measures.

**UNIT- IV** **(18 Hours)**

Labour Relation – Functions of Trade Unions – Forms of collective bargaining- Workers' participation in management – Types and effectiveness – Industrial Disputes and Settlements (laws excluded)

**UNIT- V** **(18 Hours)**

Human Resource Audit – Nature – Benefits – Scope – Approaches- Human Resource Information System (HRIS)- Need- Benefits- Designing of HRIS- Computerized HRIS.

**REFERENCE BOOKS:**

1. Human Resource Management – V S P Rao
2. Human Resource Management – Ashwathappa
3. Human Resource Management – C.B.Gupta
4. Human Resource Management – L M Prasad
5. Human Resource Management – Tripathi.
6. Human Resource Management- S.S.Khanka

**WEBLINKS:**

1. <https://books.google.co.in/books?isbn=0749446315>
2. <https://books.google.co.in/books?isbn=1285974859>
3. <https://books.google.co.in/books?isbn=813175426X>

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks:**

100

Section	Question Component	Numbers	Marks	Total
<b>A</b>	<b>Definition/Principle</b> Answer any 10 out of 12 questions (Each in 50 words)	1-12	3	<b>30</b>
	<b>Short Answer</b> Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	<b>Essay</b> Answer any 4 out of 6 questions (each in 600 words)	20-25	10	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**DISTRIBUTION OF QUESTIONS:**

Section	Units	No. of Questions	
		Theory	Problems
<b>A</b>	Unit – 1	3	
	Unit – 2	3	
	Unit – 3	2	
	Unit – 4	2	
	Unit – 5	2	
<b>B</b>	Unit – 1	2	
	Unit – 2	2	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	
<b>C</b>	Unit – 1	2	
	Unit – 2	1	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	

**CORE - XIX**  
**PAPER TITLE: SOFTWARE ENGINEERING**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: VI</b>	<b>CREDITS: 4</b>	<b>NO. OF HOURS: 90</b>

**COURSE FRAMEWORK:**

An Introduction to software engineering to understand the key information's on Software Engineering and its associated knowledge with Real time Implementation Issues.

**COURSE OUTCOMES:**

On completion of the course the students will be able:

1. Apply and formulate the principles and practices of software engineering and development
2. Create and categories efficient, reliable and cost-effective software solutions
3. Compile and manage the use of software process modules and Design Techniques effectively
4. Integrate and demonstrate implementation issues in Software Engineering
5. Plan and construct Quality software using tools and its maintainability

**UNIT I:** **(18 Hours)**

Introduction to Software Engineering Some definition – Some size factors – Quality and productivity factors – Managerial issue. Planning a Software Project: Defining the problem – Developing a solution strategy – planning the development process – planning an organization structure – other planning activities.

**UNIT II:** **(18Hours)**

Software Cost Estimation: Software – Cost factors – Software cost estimation techniques – specification techniques – level estimation – estimating software maintenance costs. The software requirements specification – formal specification techniques - languages and processors for requirements specification.

**UNIT III:** **(18Hours)**

Software Design: Fundamental Design concepts – Modules and modularizing Criteria – Design Notations – Design Techniques – Detailed Design Consideration – Real time and distributed system design – Test plan – Mile stones walk through and inspection.

**UNIT IV:** **(18 Hours)**

Implementation issues: Structured Coding techniques – coding style – standards and guidelines – documentation guidelines – type checking – scoping rules – concurrency mechanisms.

**UNIT V:****(18 Hours)**

Quality assurance – walk through and inspection - Static analysis – symbolic exception – Unit testing and Debugging – System testing – Formal verification: Enhancing maintainability during development – Managerial aspects of software maintenance – Configuration management – source code metrics – other maintenance tools and techniques.

**PRESCRIBED BOOKS:**

1. Richard E.Fairly - Software Engineering Concepts, 5<sup>th</sup> Edition - Tata McGraw-Hill book Company.

**REFERENCE BOOKS:**

1. Richard E.Fairley,Software Engineering Concepts,McGraw-Hill,1985
2. Ian Sommerville,Software Engineering-9<sup>th</sup> Edition,Darling Kindersley,2011
3. Roger S.Pressman,Software Engineering A Practitioner’s Approach-6<sup>th</sup> Edition, McGraw-Hill,2005
4. R.S.Pressman, 1997, Software Engineering – 1997 - Fourth Ed., McGraw Hill.
5. RajibMall ,2004,Fundamentals of Software Engineering,2<sup>nd</sup> Edition, PHI.

**WEBSITES:**

1. <http://people.cs.missouri.edu/~duanye/cs4320/lectures.htm>
2. <http://iiscs.wssu.edu/drupal/node/4566>

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks: 100**

<b>Section</b>	<b>Question Component</b>	<b>Numbers</b>	<b>Marks</b>	<b>Total</b>
<b>A</b>	<b>Definition/Principle</b> Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	<b>Short Answer</b> Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	<b>Essay</b> Answer any 4 out of 6 questions (each in 600 words)	20-25	10	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**DISTRIBUTION OF QUESTIONS:**

Section	Units	No. of Questions	
		Theory	Problems
<b>A</b>	Unit – 1	3	
	Unit – 2	3	
	Unit – 3	2	
	Unit – 4	2	
	Unit – 5	2	
<b>B</b>	Unit – 1	2	
	Unit – 2	2	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	
<b>C</b>	Unit – 1	2	
	Unit – 2	1	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	

**ELECTIVE -II**  
**PAPER TITLE: WEB TECHNOLOGY USING PHP**

<b>SUBJECT CODE :</b>	<b>THEORY</b>	<b>MARKS : 100</b>
<b>SEMESTER: VI</b>	<b>CREDITS: 5</b>	<b>NO. OF HOURS: 90</b>

**COURSE FRAMEWORK:**

An Introduction to basic concepts of PHP Scripting Language.

**COURSE OUTCOMES:**

On completion of the course the students will be able:

1. To develop web applications using basic PHP elements such as delimiters, control structures, operators, variables, arrays, and functions.
2. To manipulate dates and strings using built-in PHP functions and regular expressions.
3. To create dynamic web forms using internet tools such as input, environment, and server variables, HTTP headers, and query strings.
4. To read, write, manage, and download files through PHP-based web applications.
5. To track user information using cookies and sessions.

**UNIT I**

**(15 Hours)**

Introduction to PHP:- Installation of PHP, PHP configuration in IIS & Apache Web Server and features of PHP, Writing PHP: - How PHP code is parsed, Embedding PHP and HTML, Executing PHP and viewing in Browser, Data types, Operators, PHP variables: static and global variables, Comments in PHP

**UNIT II**

**(15 Hours)**

Control Structures:- Condition statements, Loops, Exit, Die, Return, Arrays in PHP, Working With Data:- FORM element, INPUT elements, Validating the user input, Passing variables between pages-Passing variables through a GET, POST, REQUEST.

**UNIT III**

**(15 Hours)**

Functions: - Built-in functions, String Functions, Math Functions, Array Functions, File Handling Functions, Miscellaneous Functions, User Defined Functions.

**UNIT IV**

**(15 Hours)**

Handling sessions and cookies:- Concept of Session, Starting session, Modifying session variables, Unregistering and deleting session variable, Concept of Cookies, Handling of Cookies, How to upload files.

**UNIT V**

**(15 Hours)**

Ajax Overview: -Understanding java scripts for AJAX, AJAX web application model, AJAX –PHP framework, Performing AJAX validation, Handling XML data using PHP and AJAX, connecting database using PHP and AJAX.

**Exercise:****(15 Hours)**

1. Create a simple HTML form and accept the user name and display the name through PHP echo statement.
2. Write a PHP script to count number of lines in a file.
3. Write a PHP function to test whether a number is greater than 30, 20 OR 10 using Ternary operator.
4. Write a PHP program to remove duplicates from a sorted list.
5. Write a PHP program to compute the sum of the digits of a number.
6. Write a function to calculate the factorial of a number (a non-negative integer). The function accepts the number as an argument.
7. Write a PHP function that checks whether a passed string is a palindrome or not?
8. Write a PHP function to change the following array's all values to upper or lower case.
9. Write a PHP program to check if an integer is the power of another integer.  
Input: 16, 2  
Example: For x = 16 and y = 2 the answer is "true", and for x = 12 and y = 2 "false"
10. Write the PHP script to get the Client IP Address.

**REFERENCE BOOKS:**

1. Core PHP Programming by Leon Atkinson : Pearson publishers
2. The complete Reference PHP by Stever Holzner : McGraw Hill
3. PHP – A beginners Guide By: Ashok Appu Publisher: Wiley
4. PHP web services - Wrox publication

**GUIDELINES TO THE QUESTION PAPER SETTERS****QUESTION PAPER PATTERN:****Max. Marks: 100**

Section	Question Component	Numbers	Marks	Total
<b>A</b>	<b>Definition/Principle</b> Answer any 10 out of 12 questions (each in 50 words)	1-12	3	<b>30</b>
<b>B</b>	<b>Short Answer</b> Answer any 5 out of 7 questions (each in 300 words)	13-19	6	<b>30</b>
<b>C</b>	<b>Essay</b> Answer any 4 out of 6 questions (each in 600 words)	20-25	10	<b>40</b>
<b>TOTAL MARKS</b>				<b>100</b>

**DISTRIBUTION OF QUESTIONS:**

<b>Section</b>	<b>Units</b>	<b>No. of Questions</b>	
		<b>Theory</b>	<b>Problems</b>
<b>A</b>	Unit – 1	3	
	Unit – 2	3	
	Unit – 3	2	
	Unit – 4	2	
	Unit – 5	2	
<b>B</b>	Unit – 1	2	
	Unit – 2	2	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	
<b>C</b>	Unit – 1	2	
	Unit – 2	1	
	Unit – 3	1	
	Unit – 4	1	
	Unit – 5	1	

**ELECTIVE -II**  
**PAPER TITLE: PRACTICAL –PYTHON PROGRAMMING LAB**

<b>SUBJECT CODE :</b>	<b>PRACTICAL</b>	<b>MARKS : 100</b>
<b>SEMESTER: VI</b>	<b>CREDITS: 5</b>	<b>NO. OF HOURS: 90</b>

**COURSE FRAMEWORK:**

Introduction to design and program complex and numeric Python applications.

**COURSE OUTCOMES:**

On completion of the course the students will be able:

1. To develop basic Programs in Python
2. To write programs using different operators in Python.
3. To create dynamic programs using functions strings.
4. To understand the concepts of mathematical functions in Python.
5. To develop programs using Conditional and Looping Structure.

**Python Programming Lab**

1. Write a menu driven program to convert the given temperature from Fahrenheit to Celsius and vice versa depending upon user's choice.
2. WAP to calculate total marks, percentage and grade of a student. Marks obtained in each of the three subjects are to be input by the user. Assign grades according to the following criteria :  
Grade A: Percentage  $\geq 80$   
Grade B: Percentage  $\geq 70$  and  $< 80$  Grade C: Percentage  $\geq 60$  and  $< 70$  Grade D: Percentage  $\geq 40$  and  $< 60$  Grade E: Percentage  $< 40$
3. Write a menu-driven program, using user-defined functions to find the area of rectangle, square, circle and triangle by accepting suitable input parameters from user.
4. WAP to find factorial of the given number.
5. WAP to find sum of the following series for n terms:  $1 - 2/2! + 3/3! - \dots - n/n!$
6. Write a program that reads an integer value and prints —leap year| or —not a leap year|.
7. Write a program that takes a positive integer n and then produces n lines of output shown as follows.  
For example enter a size: 5  
\*  
\*\*  
\*\*\*  
\*\*\*\*  
\*\*\*\*\*
8. Write a function that takes an integer input and calculates the factorial of that number.
9. Write a function that takes a string input and checks if it's a palindrome or not.
10. Write a list function to convert a string into a list, as in list ('\_abc') gives [a, b, c].
11. Write a program to generate Fibonacci series.
12. Write a program to check whether the input number is even or odd.
13. Write a program to compare three numbers and print the largest one.

## ELECTIVE -II

### PAPER TITLE: PRACTICAL – R PROGRAMMING LAB

<b>SUBJECT CODE :</b>	<b>PRACTICAL</b>	<b>MARKS: 100</b>
<b>SEMESTER: VI</b>	<b>CREDITS: 5</b>	<b>NO. OF HOURS : 90</b>

#### **COURSE FRAMEWORK:**

To learn R Programming Environment and to explore Mathematical and Statistical Functions.

#### **COURSE OUTCOMES:**

On completion of the course the students will be able:

1. To understand the basics of R Programming
2. To Estimate the relationship between variables, data types and Built-in Functions.
3. To create dynamic programs using R with Data Frames and List.
4. To understand Control Structures and Looping Statements in R.
5. To develop appropriate statistical reports and visualization using R.

#### **PROGRAMS:**

1. History of R
2. Installing R and Packages in R
3. Programs on data types in R
4. Built-in Functions in R
5. Creating and manipulating a vector in R
6. Creating matrix and manipulating matrix in R
7. Creating and operations on Factors in R
8. Viva-Voce Question and Answers Cycle-1
9. Operations on Data Frames in R
10. Operations on List in R
11. Programs on Operators in R
12. Comparisons of Operators and Vectors in R
13. Programs of if-else statement in R
14. Programs on For loop in R
15. Programs on While loop in R
16. Customizing and Saving to Graphs in R
17. Viva-Voce Question and Answers Cycle-1

#### **Additional Experiments**

1. PLOT Function R to customize graphs.
2. 3D PLOT in R to customize graphs.