GOBI ARTS & SCIENCE COLLEGE (AUTONOMOUS) : GOBICHETTIPALAYAM

SCHEME OF EXAMINATIONS - B.C.A. (COMPUTER APPLICATIONS) (16 BATCH)

No.	Code	Subject Title	Hrs	CIA	EOSE	Total	Credit
SEMESTER : 1							
1	16U1TM11	PART I : TAMIL - I	3	25	75	100	3.0
2	16U2EN01	PART II : ENGLISH - I	3	25	75	100	3.0
3	12UACA01	PART III : MAJOR CORE : OFFICE AUTOMATION TOOLS	3	25	75	100	3.5
4	11UACA02	DIGITAL COMPUTER FUNDAMENTALS	3	25	75	100	3.5
5	09UBCA03	PART III : ALLIED CORE : COMPUTER ORIENTED NUMERICAL METHODS	3	25	75	100	5.0
6	16UACAP1	MAJOR CORE PROGRAMMING LAB - I (OFFICE AUTOMATION TOOLS)	3	25	75	100	2.0
7	15U4HE01	PART-IV: i)HUMAN EXCELLENCE:PAPER-I BASICS OF YOGIC LIFE	3	25	75	100	1.0
SEMESTER : 2							
8	16U1TM12	PART I : TAMIL - II	3	25	75	100	3.0
9	16U2EN02	PART II : ENGLISH - II	3	25	75	100	3.0
10	08UACA04	PART III : MAJOR CORE : PROGRAMMING IN C	3	25	75	100	3.5
11	11UACA05	COMPUTER SYSTEM ARCHITECTURE	3	25	75	100	3.5
12	15UBCA06	PART III :ALLIED CORE : STATISTICAL METHODS	3	25	75	100	5.0
13	15UACAP2	MAJOR CORE PROGRAMMING LAB - II (C)	3	25	75	100	2.0
14	15U4HE02	PART-IV : i)HUMAN EXCELLENCE:PAPER-II SUBLIMATION AND SOCIAL WELFARE	3	25	75	100	1.0
15	13U4HEP1	PRACTICAL – I: YOGA PRACTICE-I		100		100	1.0
16	12U4FN01	ii)FOUNDATION SUBJECT-A: GENERAL AWARENESS	1.5		100	100	1.0
SEMESTER : 3							
17	11UACA19	PART III : MAJOR CORE : DATA STRUCTURES AND ALGORITHMS	3	25	75	100	3.5
18	16UACA08	OPERATING SYSTEM	3	25	75	100	3.5
19	14UACA09	CLIENT SERVER COMPUTING	3	25	75	100	3.5
20	08UACA10	OBJECT ORIENTED PROGRAMMING & C++	3	25	75	100	3.5
21	14UBCO61	PART III : ALLIED CORE : INTRODUCTION TO ACCOUNTANCY	3	25	75	100	5.0
22	11UACAP3	MAJOR CORE PROGRAMMING LAB-III (DATA STRUCTURES IN C)	3	25	75	100	2.0
23	11UACAP4	MAJOR CORE PROGRAMMING LAB-IV (C++)	3	25	75	100	2.0
24	14U4HE03	PART-IV : i)HUMAN EXCELLENCE: PAPER-III MENTAL PROSPERITY AND HUMAN EXCELLENCE	3	25	75	100	1.0
25		ii) FOUNDATION SUBJECT-B:	3		100	100	2.0

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SEMESTER : 4

26	12UACA11	PART III: MAJOR CORE: RELATIONAL DATABASE MANAGEMENT SYSTEM	3	25	75	100	4.0
27	16UACA12	VISUAL BASIC	3	25	75	100	4.0
28	12UACO61	MARKETING	3	25	75	100	4.0
29		PART III : ALLIED OPTIONAL :	3	25	75	100	5.0
30	16UACAP5	MAJOR CORE PROGRAMMING LAB - V (RDBMS & ACCOUNTING PACKAGE)	3	25	75	100	2.0
31	16UACAP6	MAJOR CORE PROGRAMMING LAB - VI (VISUAL BASIC)	3	25	75	100	2.0
32	14U4HE04	PART-IV : i)HUMAN EXCELLENCE: PAPER-IV SCIENCE OF DIVINITY AND REALIZATION OF SELF	3	25	75	100	1.0
33	13U4HEP2	PRACTICAL – II: YOGA PRACTICE-II		100		100	1.0
34		ii)FOUNDATION SUBJECT-B	3		100	100	2.0
35		PART V : CO-CURRICULAR ACTIVITIES					1.0

SEMESTER : 5

36	16UACA13	PART III : MAJOR CORE: MULTIMEDIA SYSTEMS AND DESIGN	3	25	75	100	4.5
37	11UACA14	JAVA PROGRAMMING	3	25	75	100	4.5
38	11UACA07	SYSTEM ANALYSIS AND DESIGN	3	25	75	100	4.5
39	12UACA16	COMPUTER NETWORKS	3	25	75	100	4.5
40	11UACAP7	MAJOR CORE PROGRAMMING LAB-VII (JAVA)	3	25	75	100	2.5
41	16UACAP8	MAJOR CORE PROGRAMMING LAB-VIII (MULTIMEDIA)	3	25	75	100	2.5
42		PART III : MAJOR OPTIONAL:	3	25	75	100	4.0

SEMESTER : 6

43	16UACA18	PART III : MAJOR CORE : WEB DESIGN	3	25	75	100	4.5
44	16UACAP9	MAJOR CORE : PROGRAMMING LAB-IX (WEB DESIGN)	3	25	75	100	2.5
45	11UECA01	MAJOR SKILL BASED PAPER : COMPUTER GRAPHICS	3	25	75	100	4.5
46	14UECAP1	MAJOR SKILL BASED PRACTICAL : PROGRAMMING LAB-X (COMPUTER GRAPHICS)	3	25	75	100	2.5
47	16UACA20	MAJOR CORE: PROGRAMMING WITH PHP	3	25	75	100	4.5
	16UACAPA	PROGRAMMING LAB-XI(PHP)	3	25	75	100	2.5
		(OR)					
	11UACAV1	PROJECT WORK		25	75	100	7.0

CREDIT:

PART I : 6 PART II : 6 PART III : MAJOR : 100
ALLIED: 20
---> 120
PART IV : 11 PART V : 1 TOTAL : 144

SEMESTER-I
OFFICE AUTOMATION TOOLS

Instructional Hrs: 60
Objective: 1. To work on Linux environment.

2. To work on presentation & spread sheet through impress & calc.

3. To work on documents in writer.

UNIT-I 12 Hrs

LINUX: Basic of Linux – Getting started with Linux, Working with K Desktop Environment, Working with Files and Directories.

UNIT-II 12 Hrs

GIMP: Introducing GIMP, Working with Tools, Working with Layers and Text.

UNIT-III 12 Hrs

Writer: Getting started with OpenOffice.org Writer, Editing Documents in Writer, Formatting the Document.

UNIT-IV 12 Hrs

Impress: Getting started with OpenOffice.org Impress, Working with Presentations

UNIT-V 12 Hrs

Calc: Getting started with OpenOffice.org Calc, Working with Functions and Operators, Working with the OpenOffice.org Calc Layout.

TEXT BOOK:

Vikas Gupta, "LINUX AND OPEN OFFICE COURSE KIT", Dreamtech press, First Edition, 2010. (Unit I – V)

REFERENCE BOOKS:

1. Andy Channelle, "BEGINNING OPEN OFFICE 3: FORM NOVICE TO PROFESSIONAL", Apress, First Edition, 2009.
2. Greg M.Perry, "SAMS TEACH YOURSELF OPEN OFFICE.ORG ALL IN ONE", Prentice Hall, First Edition, 2004.
3. Jeffery A.Riley, "INTRODUCTION TO OPEN OFFICE.ORG", Prentice Hall, First Edition, 2009.
4. Gurdy Leete, Ellen Finkelstein, Mary Leete, "OPEN OFFICE.ORG FOR DUMMIES", Wiley publishing Inc, First Edition, 2004.

SEMESTER-I
DIGITAL COMPUTER FUNDAMENTALS

Instructional Hrs: 60
Objective: 1. To study various digital logic circuits and how they are implemented in computer organization.

2. To get knowledge about various data types and its representations.

3. To know low the memory and register operations are implemented.

UNIT-I 12 Hrs

DIGITAL LOGIC CIRCUITS: Digital Computers – Logic Gates – Boolean Algebra – Map Simplification – Combinational Circuits – Flipflop – Sequential Circuits.

UNIT-II 12 Hrs

DIGITAL COMPONENTS: Integrated circuits – decoders – Multiplexers – Registers – Shift Registers – Binary Counters – Memory Unit

DATA REPRESENTATION: Data types – Complements – Fixed – Point Representation – Floating point Representation – Other Binary Codes – Error Detection Codes.

UNIT-III 12 Hrs

REGISTER TRANSFER AND MICROOPERATIONS: Register Transfer Language –Register Transfer – Bus and Memory Transfers – Arithmetic Micro operations – Logic Micro operations – Shift Micro operations – Arithmetic Logic Shift Unit.

UNIT-IV 12 Hrs

BASIC COMPUTER ORGANIZATION AND DESIGN: Instruction Codes – Computer Registers – Computer Instructions – Timing and Control – Instruction Cycle – Memory – Reference Instructions – Input–Output and Interrupt- Complete Computer Description – Design of Accumulator Logic.

UNIT-V 12 Hrs

PORGRAMMING THE BASIC COMPUTER: Machine Language – Assembly Language – The Assembler – Program Loops – Programming Arithmetic and logic operations – Subroutines – Input-Output Programming.

MICROPROGRAMMED CONTROL: Control Memory – Address Sequencing – Microprogram Example – Design of Control Unit.

TEXT BOOK:

M.Morris Mano, “COMPUTER SYSTEM ARCHITECTURE”, Prentice – Hall of India Private Limited, Third Edition, 2008. (Unit I – V)

REFERENCE BOOKS:

1. Thomas C.Bartee, “DIGITAL COMPUTER FUNDAMENTALS”, Tata McGraw Hill, Sixth Edition, 2001.
2. V.Rajaraman, T.RadhaKrishnan, “AN INTRODUCTION TO DIGITAL COMPUTER DESIGN”, PHI, Fifth Edition, 2009.

BCA I SEMESTER / B.Sc (CT – II SEMESTER)
COMPUTER ORIENTED NUMERICAL METHODS

Instructional Hrs: 90

Objectives:1. To find accurate solution to the given problem.

2. Find solution from the beginning of table middle of table and end of table.

3. Accurate solution for ordinary differential equations.

UNIT-I 18 Hrs

The Solution of Numerical Algebraic and Transcendental Equations – Bisection method – Iteration Method – Newton-Raphson method – The method of false position.

UNIT-II 18 Hrs

The Solution of Simultaneous Linear Algebraic Equation – Gauss Elimination method – Gauss Jordon Elimination method – Triangularization Method – Gauss Seidal method – Gauss – Jacobi method.

UNIT-III 18 Hrs

Interpolation – Newton forward interpolation formula – Newton backward interpolation formula – LaGrange's formula. Numerical Differentiation – Newton's Forward Difference formula – Newton's backward difference formula.

UNIT-IV 18 Hrs

Numerical Integration – Trapezoidal rule – Simpson's One –third rule – Simpson's three – eighths rule.

UNIT-V 18 Hrs

Numerical solution of ordinary differential equations – Taylor method – Euler method – Euler Modified Method – Runge-Kutta method – Predictor Corrector Methods – Adam's Method – Milne Methods.

Note: Derivations not necessary for all the above topics.

TEXT BOOK:

1. NUMERICAL METHODS – P. Kandasamy, K. Thilagavathi, K. Gunavathi, S. Chand & company Ltd. New Delhi Revised Edition 2005.

REFERENCE BOOKS:

1. **COMPUTER ORIENTED NUMERICAL METHODS** – V. Rajaraman, PHI pub.
2. Introductory Methods of Numerical Analysis – S. Sastry, Perntice Hall India Ltd., New Delhi, 1994.

BCA – SEMESTER - I

(Common for BCA & IT)

PROGRAMMING LAB – I (OFFICE AUTOMATION TOOLS)

Instructional Hrs: 60

Objectives:
1. Able to make work on writer.
2. To make use on calc.
3. To design presentations in Impress & GIMP.

1. Create an open Office Writer application with 10 lines and perform various task such as Bold, Italic, Underline, Font-Size, Color, Background color, Line Spacing, Header & Footer, Page Numbering, Bullets & Numbering and Change Case.
2. Design an Invitation Card in Writer.
3. Design a Time Table in Writer.
4. Perform Mail-Merge for many companies in different cities through Writer.
5. Maintain a worksheet of Student Mark List for each semester in Open Office Calc.
6. Create a Chart for Student Mark List in a worksheet in Calc.
7. Maintain the sales details for the company for six days in a week for the branches and perform the following operations in Calc.

a. Sales details Day wise

b. Sales details Branch wise

c. Sales details Product wise

d. Highest Sales details in Product wise.

8. Create Consolidated Mark sheet for three semesters using Calc.
9. Develop a table for Saving Scheme in Calc and calculate the interest amount using the principle amount, number of years and rate of interest.
10. Design a Greeting card using GIMP.
11. Create a Rainbow using GIMP.
12. Design sun using GIMP.
13. Using GIMP create Planet and Saturn.
14. Design a presentation about the college in Open Office Impress.
15. Design a presentation for product advertisement in Impress.
16. Design a presentation for the Newspaper in Impress.

SEMESTER-II
PROGRAMMING IN C

Instructional Hrs: 60

Objectives: 1. The content has been revised keeping the updates which have taken placed in the field of C programming and the present has syllabus needs.

2. To know about concept of control statement, arrays and pointer.

3. To know about concept of structure, function and file.

UNIT-I 12 Hrs

INTRODUCTION: Introduction – Overview of C – Constants, Variables and Data Types – Operators and Expression – Managing Input and Output Operators.

UNIT-II 12 Hrs

CONTROL STATEMENT: Decision Making and Branching – IF, IF…ELSE, SWITCH…CASE, WHILE, DO…WHILE, FOR, GOTO, Loops, Storage Classes – Programs.

UNIT-III 12 Hrs

ARRAYS AND STRUCTURE: Arrays – Multi Dimension Arrays – Programs – Handling of Character Strings – Structures and Union – Programs.

UNIT-IV 12 Hrs

FUNCTIONS: Types of Functions**.**
POINTERS: Introduction – Understanding Pointers – Pointer Expressions – Pointers and Arrays – Pointers and Character Strings – Pointers and Structure – Pointers and Functions.

UNIT-V 12 Hrs

FILE AND THE PREPROCESSOR: File Management in C – Sequential and Random Files – Dynamic Memory Allocation and Linked List – Simple Programs – The Preprocessor.

TEXT BOOK:

1. Programming in ANSI C
   - E.Balagurusamy
   - Tata McGraw – Hill Publishing Company Limited (1992)

SEMESTER-II
COMPUTER SYSTEM ARCHITECTURE

Instructional Hrs: 60
Objectives: 1. To get knowledge about all the aspects of the design and organization of CPU.
2. To identify the main types of memory technology.
3. To know how interrupts are used to implement I/O control and data transfers.

UNIT-I 12 Hrs

CENTRAL PROCESSING UNIT: Introduction – General Register Organization – Stack Organization – Instruction Formats – Addressing Modes – Data Transfer and Manipulation – Program Control – Reduced Instruction Set Computer(RISC)

UNIT-II 12 Hrs

PIPELINE AND VECTOR PROCESSING: Parallel Processing – Pipelining – Arithmetic Pipeline – Instruction Pipeline – RISC Pipeline – Array Processors.

UNIT-III 12 Hrs

COMPUTER ARITHMETIC: Addition and Subtraction – Multiplication Algorithms – Division Algorithms – Floating-Point Arithmetic Operations – Decimal Arithmetic Unit – Decimal Arithmetic Operations.

UNIT-IV 12 Hrs

INPUT – OUTPUT ORGANIZATION: Peripheral Devices – Input-Output Interface – Asynchronous Data Transfer – Modes of Transfer – Priority Interrupt – DMA – Input-Output Processor – Serial Communication.

UNIT- V 12 Hrs

MEMORY ORGANIZATION – Memory Hierarchy – Main Memory – Auxiliary Memory – Associative Memory – Cache Memory – Virtual Memory.

MULTIPROCESSORS: Characteristics - Interconnection Structures – Interprocessor Arbitration – Interprocessor Communication and Synchronization – Cache Coherence.

TEXT BOOK:

M. Morris Mano, “COMPUTER SYSTEM ARCHITECTURE”, Prentice-Hall of India Private Limited, Third Edition, 2008. (Unit I – V)

REFERENCE BOOKS:

1. B. Govindarajalu, “COMPUTER ARCHITECTURE AND ORGANIZATION”, Tata McGraw Hill, Fourth Edition, 2006.

2. Thomas C.Bartee, “COMPUTER ARCHITECTURE AND LOGIC DESIGN”, McGraw Hill International Editions, First Edition, 2006.

SEMESTER - II

STATISTICAL METHODS

Instructional Hrs : 75

Objectives :
1. To calculate mean, median and mode using various methods.
2. To prepare cumulative frequency distribution, discrete frequency distribution, quartile deviation etc.
3. To calculate index values and trend value.

UNIT – I 15 Hrs

Statistics: Classification & Tabulation of Data – Measures Of Central Values: Mean – Median – Mode – Their Relationship-Problems

UNIT – II 15 Hrs

Measures of Dispersion: Range – Quartile Deviation – Mean Deviation – Standard Deviation – Problems

UNIT – III 15 Hrs

Correlation: Meaning – Types –Coefficient Of Correlation – Rank Correlation – Concurrent Deviation Method – Problems

UNIT – IV 15 Hrs

Index Numbers: Definition – Uses – Unweighted and weighted Index numbers- Tests of Adequacy

UNIT – V 15 Hrs

Time Series: Definition – Components of Time Series – Measurement of Trend: Graphic Method – Semi-Average Method – Moving Average Method – Even Period of Moving Average

TEXT BOOK:

S.P.Gupta, “STATISTICAL METHODS”, Sultan Chand & Sons, Revised Edition, 2010.

REFERENCE BOOKS:

1. S.P.Gupta, “BUSINESS MATHEMATICS AND STATISTICS”, Jai Publishers, First Edition, 2004.
2. R.S.N. Pillai, Bagavathi, “STATISTICS”, S.Chand & Co. Ltd., Seventh Edition, 2008.
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SEMESTER-II

PROGRAMMING LAB II – (C)

Instructional Hrs: 60

Objectives:
1. To learn the basic structure of programming.
2. To learn programs with decision making statements and loops.
3. To learn about building Block of statements.

1. Write a C program to calculate the sum of digits of a given number.
2. Write a C program to find a factorial for given number.
3. Write a C program to print the Fibonacci series.
4. Write a C program to find the Ramanujam number.
5. Write a C program to print the numbers between some interval which divisible by four.
6. Write a C program to find the Maximum and Minimum value in a array.
7. Write a C program to sort a given number.
8. Write a C program to add two matrices.
9. Write a C program for converting numbers into words.
10. Write a C program to find and count number of vowels in a word or string.
11. Write a C program for sorting string in a alphabetical order.
12. Write a C program to find the roots of a Quadratic Equation.
13. Write a C program for swapping two values using pointers.
14. Write a C program to print Electricity Bill using File.
15. Write a C program to Maintain Student Mark List using Structure.

SEMESTER-III
DATA STRUCTURES AND ALGORITHMS

Instructional Hrs: 60
Objectives: 1. To know about the concepts of mathematical notations.

2. To know about the concepts of arrays, lists, stacks & queues.

3. To know about the concepts of Trees & Graphs.

UNIT-I 12 Hrs

Introduction – Basic Terminology: Elementary Data Organization – Data Structures – Data Structures Operations – Preliminaries – Mathematical Notation and Functions – Algorithmic Notation – Control Structure – Complicity of Algorithms – Other Asymptotic Notations for Complicity by Algorithms.

UNIT-II 12 Hrs

Arrays, Records and Pointers: Introduction – Linear Arrays – Representation by Linear Arrays in Memory – Traversing Linear Arrays – Inserting and Deleting – Linked List: Introduction Representation of Linked List in Memory – Traversing a Linked List – Searching a Linked List – Memory Allocation – Insertion into a Linked List – Deletion from a Linked List.

UNIT-III 12 Hrs

STACKS, Queues, RECURSION: Introduction – Stacks – Arrays Representation of Stacks – Linked Representation of Stacks – Arithmetic Expression – Polish Notation – Quick Sort, an Application of Stacks – Recursion – Towers of Hanoi – Queues – Linked Representation of Queues.

UNIT-IV 12 Hrs

TREES: Introduction – Binary Trees – Representing Binary Trees in memory – Traversing Binary Trees – Traversal Algorithms using Stacks – Graphs and their Applications – Graph theory Terminology – Sequential Representation of Graphs: Adjacency matrix, path matrix, Warshall’s Algorithm, Shortest Paths.

UNIT-V 12 Hrs

Sorting and searching: Introduction – Sorting – Insertion Sort – Selection Sort – Merging – Merge Sort – Radix Sort – Searching and Data Modification – Hashing.

TEXT BOOK:

Seymour Lipschutz, GA Vijayalakshmi Pai, “DATA STRUCTURES”, Tata McGraw HILL, Fourth Edition, 2006. (Unit I – V)

REFERENCE BOOKS:

1. 1.Alfred V.Aho, John E. Hopcroft, Jeffrey D.Ullman, “DATA STRUCTURES AND ALGORITHMS”, Pearson Education, First Edition, 2005.

2. Ellis Horowitz, Saartaj Sahni, “FUNDAMENTALS OF DATA STRUCTURES”, Galgotia Book Source, Fourth Edition, 1978.

B.C.A - SEMESTER – III
(Common for CS, BCA, IT & CT)
OPERATING SYSTEM

Instructional Hours: 60

Objectives: 1. To understand what a process is and how processes are synchronized and scheduled.

2. To understand the structure and organization of the file system.

UNIT-I **12 Hrs**

Introduction: What is an Operating System?-History of operating systems-**Operating System Concepts:** Processes-Files-The shell-**System Calls:** Process Management-Signaling-File Management-Directory Management-Protection-Time Management-**Operating System Structure:** Monolithic Systems-Layered Systems-Virtual Machines-Client-Server Model.

UNIT-II **12 Hrs**

PROCESS MANAGEMENT: Introduction-Definitions of Process-Process States-Process State Transitions-The Process Control Block-Operations on Processes-Suspend and Resume-Interrupt processing-The Nucleus of the Operating System. **ASYNCHRONOUS CONCURRENT PROCESSES:** Introduction-Parallel processing- A Control Structure for Indicating Parallelism: Parbegin/Parend-Mutual Exclusion-Critical Sections-Mutual Exclusion Primitives-Implementing Mutual Exclusion Primitives.

UNIT-III **12 Hrs**

DEADLOCK AND INDEFINITE POSTPONEMENT: Introduction-Examples of Deadlock-A Related Problem: Indefinite Postponement-Resource Concepts-Four Necessary Conditions for Deadlock-Major areas of Deadlock Research- Deadlock Prevention-Deadlock Avoidance and the Banker's Algorithm-Deadlock Detection-Deadlock Recovery. **REAL STORAGE:** Introduction-Storage Organization-Storage Management-Storage Hierarchy-Storage Management Strategies-Contiguous vs Noncontiguous Storage Allocation-Single User Contiguous Storage Allocation-Fixed Partition Multiprogramming-Variable Partition Multiprogramming.

UNIT-IV **12 Hrs**

JOB AND PROCESSOR SCHEDULING: Scheduling Levels-Objectives-Criteria-Preemptive vs Nonpreemptive Scheduling-The Interval Timer or Interrupting Clock-Priorities-Deadline Scheduling-First In First Out(FIFO)-Round Robin(RR)-Shortest-Job-First(SJF)-Shortest- Remaining-Time(SRT)-Highest-Response-Ratio-Next(HRN)-Multilevel Feedback Queues-Fair Share Scheduling.

UNIT-V **12 Hrs**

DISK PERFORMANCE OPTIMIZATION: Operation of Moving-Head Disk Storage-Desirable Characteristics of Disk Scheduling Policies-Seek Optimization-Rotational Optimization. **FILE SYSTEMS:** The File System-File System Functions- The Data Hierarchy-Blocking and Buffering-File Organization-Queued and Basic Access Methods-Allocating and Freeing Space-File Descriptor.

TEXT BOOKS:

1. **ADREW .S TANENBAUM,** "Operating Systems -Design and Implementation", Prentice Hall of India, 1990 (UNIT I).
2. **H.M. DEITEL,** "Operating Systems", Second Edition, Pearson Education, 2006 (UNITS II, III, IV, V).

SEMESTER-III
CLIENT SERVER COMPUTING

Instructional Hrs: 60

Objectives: 1. To know about Client/Server Building Blocks.
2. To learn about Transaction Processing.
3. To know about Groupware & Distributed Objects and Components.

UNIT-I 12 Hrs

INTRODUCTION TO CLIENT/SERVER COMPUTING: What is client/server?, File Servers, Database Servers, Transaction Servers, Groupware Servers, Object Servers, Web Servers, Middleware, Fat Servers, Fat Clients, 2-tier versus 3-tier. CLIENT/SERVER BUILDING BLOCKS: Operating Systems, Base Services, Extended Services, Server Scalability- Remote Procedure Call (RPC), Messaging and Queuing.

UNIT-II 12 Hrs

SQL DATABASE SERVERS – SQL and Relational Databases, SQL Database Server Architecture, Stored Procedures, Triggers and Rules - DATA WAREHOUSE – What Is OLTP?, Information Hounds, DSS, EIS, Elements Of Data Warehousing, Warehouse Hierarchies, Replication Versus Direct Access, The Mechanics Of Data Replication.

UNIT-III 12 Hrs

CLIENT/SERVER TRANSACTION PROCESSING: The ACID Properties, Transaction Models, TP MONITORS: TP Monitors, Transaction Management Standards – TP Lite, TP Heavy.

UNIT-IV 12 Hrs

CLIENT/SERVER GROUPWARE: Importance of Groupware, What is Groupware?, The Components of Groupware, Groupware trends, Lotus Notes 4.0.

UNIT-V 12 Hrs

DISTRIBUTED OBJECTS AND COMPONENTS: Benefits of distributed objects, From Distributed Objects to Components, 3-tier Client/Server, Object Style – CORBA – Distributed Objects, CORBA style, OMG's Object Management Architecture, Object Request Broker (ORB), Anatomy of a CORBA 2.0 ORB, CORBA Object Services, CORBA Common Facilities, CORBA Business Objects.

Text Book :

Robert Orfali, Dan Harkey, Jeri Edwards, "THE ESSENTIAL CLIENT/SERVER SURVIVAL GUIDE", Galgotia Publications Private Ltd., Second Edition, 2001. (Unit I to V).

Reference Book :

1. Dawna Travis Dewire, "CLIENT SERVER COMPUTING", Tata Mcgraw Hill, Second Edition, 2003.
2. Patrick Smith, Steve Guengerich, "CLIENT SERVER COMPUTING", PHI Learning Private Limited, Second Edition, 2012.

SEMESTER-III
OBJECT ORIENTED PROGRAMMING AND C++

Instructional Hrs: 60

Objectives: 1. It is used to help know about control structure.
2. To know about inheritance, virtual function.
3. To know about operator over loading, Private and Public function.

UNIT-I 12 Hrs

Principles of object oriented programming software evolution – procedure and object oriented paradigm – basic concepts of OOP – Benefits of OOP – object oriented languages – Application of OOP – Beginning with c++ - what is c++ - Application of c++ - c++ statements – structure of c++ program – Tokens, Expressions and control structures Tokens – Identifiers – basic and user defined data types – operators in c++ - Operator overloading – operator precedence – contract structures.

UNIT-II 12 Hrs

Function in c++ -the main function – function prototyping – Return by reference – Inline function – function overloading – friend and virtual functions. Class and object – Introduction – specifying a class – defining member function – nesting of member functions private member functions – arrays within a class – static member functions – arrays of objects – object as function arguments – friendly function – pointer to members.

UNIT-III 12 Hrs

Constructors and Destructors – Introduction – Constructors – Constructor overloading – constructors with default arguments – dynamic Initialization of objects – copy constructor – dynamic constructor – destructors – Overloading and ambiguity – Finding the address of an overloaded function – The basic of operator overloading – overloading binary operators – overloading the relational and logical operators – overloading an unary operator using friend operator functions – overloading the subscript operator.

UNIT-IV 12 Hrs

Inheritance – Extending classes – defining derived classes – Single, Multilevel, Multiple, Hierarchical and Hybrid Inheritance – Virtual Base classes – Abstract classes – Constructors in derived classes – Pointers, virtual function and polymorphism – pointers to objects – This pointer – pointers to Derived classes – Virtual function – Templates – Exception Handling.

UNIT-V 12 Hrs

Managing Console I/O operations – C++ streams – C++ stream classes – Unformatted I/OI operations – formatted console I/O operations - Managing output with manipulators – working with files – classes for file stream operations – opening and closing a file – file pointers and their manipulators – Sequential I/O operations – Name Spaces.

TEXT BOOKS:

1. Teach Yourself C++, Herbert Schildt, Tata McGraw Hill, Third Edition, 2001.

2. E. Balagurusamy object oriented programming with C++, Tata McGraw Hill publishing company Ltd., 1998.

3. The C++ Programming Language, Bjarnie Storsturp, Addison Wesly Publications.

4. K.R. Venugopal , Rajkumar, T. Ravishankar, Mastering C++ Tata McGraw Hill publishing company Ltd., 1998.

5. Robert Lafore, Object oriented programming in Turbo C++ - Galgotia publications.

SEMESTER-III

INTRODUCTION TO ACCOUNTANCY

Instructional Hours: 75

Objectives:
1. To enable the students to learn basic Principles of Accountancy.
2. To make the student Skill-full in preparing Final Accounts of Sole Trader.
3. Facilitating the students to learn about various types of Errors and their Rectification

Unit –I 15Hrs

Meaning of Accounting – Book Keeping – financial accounting – Various concepts of accounting – conventions regarding financial statements – Accounting Terms – Principles of Double Entry – Rules for debit and credit.

UNIT II 15 Hrs

Journal – Meaning. Ledger – meaning – Relation between Journal and Ledger – Posting in the Ledger – Balancing of account – Significance of Debit and Credit Balance – Trial balance – Meaning – Preparation of Trial Balance.

UNIT III 15Hrs

Subsidiary Books – meaning – Purchase Book – Sales Book – Purchase Returns Book – Sales Returns Book – Cash Discount Vs Trade Discount – Cash Book – Simple Cash book – Cash book with Cash and Discount column – Three Column Cash Book, Petty Cash Book.

UNIT IV 15Hrs

Final Accounts – Adjustments in Final Accounts – Closing Entries – Adjusting Entries. Provision for Bad and doubtful debts – Provisions for Discount.

UNIT V 15 Hrs

Bank Reconciliation Statement – Errors – Classification of Errors – Rectification of Errors - Suspense Account.

Books Recommended:

1. T.S. Grewal – Introduction to Accountancy.
2. R.L. Gupta – Introduction to Accountancy
3. M.C. Shukla & T.S. Grewal – Advanced Accounts.
4. S.P. Jain & K.L. Narang – Advanced Accountancy.

Note to Question Paper Setter:

Note 1:

The Question Paper is to be divided into three section. Section A is to carry 10 marks, Section B is carry 20 marks and Section C is to carry 45 marks.

Section A: Questions for answers not exceeding one or two sentences with no choice. (10 x 1 = 10)

Section B contains 8 questions, out of which 5 questions are to be answered. Each question carries 4 marks. Out of 8 questions, 5 shall be problems and 3 shall be theory.

Section C contains 5 questions out of which 3 questions are to be answered. Each question carries 15 marks. Out of 5 questions 3 shall be problems and 2 shall be theory.

Note 2:

1. Section A: Not more than two questions form each unit.
2. Section B: Not more than two questions but alteast one questions from each unit.
3. Section C: One question from each unit.

SEMESTER-III
PROGRAMMING LAB - III (DATA STRUCTURES IN C)

Instructional Hrs: 60
Objectives: 1. To work on recursive concepts.

2. To work on different searching & sorting concepts.

3. To know about stack & queue operations.

1. Write a C program to find factorial of the given number using recursion.
2. Write a C program to find Fibonacci series up to the given limit using recursion.
3. Write a C program to find GCD for the given two numbers using recursion.
4. Write a C program display the movement disks to give a tower using recursion.
5. Write a C program to find binomial co-efficient for the given numbers.
6. Write a C program to search the given number by linear search.
7. Write a C program to search the given number by Binary search.
8. Write a C program to sort the given numbers using Insertion sort.
9. Write a C program to sort the given numbers using Quick sort.
10. Write a C program to display the sparse matrix.
11. Write a C program to perform Stack operations.
12. Write a C program to perform Queue operations.
13. Write a C program to convert infix to postfix expression.
14. Write a C program to evaluate postfix expression.
15. Write a C program to add two polynomial equations.

SEMESTER-III
PROGRAMMING LAB - IV (C++)

Instructional Hrs: 60

Objectives: 1. To know about C++ programming basics.

2. To develop the programming skill in C++

3. To know about OOPS concepts.

1. Write a C++ program to find the factorial of the given number using function.
2. Write a C++ program to perform arithmetic operations using inline function.
3. Write a C++ program to perform function overloading for finding area of different shapes.
4. Write a C++ program for string manipulations.
5. Write a C++ program for complex number addition using constructor.
6. Write a C++ program for finding the large value using friend function.
7. Write a C++ program to perform arithmetic operations using the operator overloading.
8. Write a C++ program to find the biggest among the N numbers.
9. Write a C++ program for constructor and destructor.
10. Write a C++ program to join two strings using dynamic constructor.
11. Write a C++ program for displaying personal details using classes and objects.
12. Write a C++ program for electricity bill preparation.
13. Write a C++ program for pay bill calculation.
14. Write a C++ program to create mark sheet for your current semester.
15. Write a C++ program to display bank details.

SEMESTER-IV
RELATIONAL DATABASE MANAGEMENT SYSTEMS

Instructional Hrs: 75
Objectives: 1. To know about database, database design.

2. To know about SQL commands.

3. To create and maintain databases using SQL Queries.

UNIT-I 15 Hrs

INTRODUCTION: RDBMS Terminology – The Relational Data Structure – Relation Data Integrity – Codd's Rules. DATABASE ARCHITECTURE AND DATA MODELING: Conceptual, Physical and Logical Database Models –Database Design – Design Constraints – Functional Dependencies. ENTITY RELATIONSHIP MODELING: E-R Model – Components of an E-R Model, E-R Modeling Symbols.

UNIT-II 15 Hrs

DATA NORMALIZATION: Introduction – First (1NF), Second (2NF), Third (3NF) Normal Forms, Boyce-Cod Normal Form (BCNF), Fourth (4NF), Fifth(5NF) Normal Forms, Domain-key Normal Form, Denormalization. RELATIONAL ALGEBRA AND RELATIONAL CALCULUS: Relational Algebraic operations: union, intersection, difference, Cartesian product, select, project, rename, join, division. Tuple Relational Calculus, Domain Relational Calculus.

UNIT-III 15 Hrs

SQL PLUS: Menus – commands – Editing the Command Line – The Describe Command – The COLUMN Command – Basic SQL: SQL Language Basics – The SELECT Command – Data Types – Expressions and operators – Functions – The INSERT Command – The UPDATE Command – The DELETE Command – Transactions.

UNIT-IV 15 Hrs

Schema Objects – Data Integrity: Types – Integrity Constraints. Creating and Manipulating Tables: The CREATE TABLE Command – Modifying Tables – Deleting a Table. Indexes: Creating Indexes – Changing an Index SEQUENCES: The create sequence command – Pseudo columns – Deleting, changing, using sequence. VIEWS: How a view works – Creating a view – Deleting a view – Replacing a view SYNONYMS: Creating, Renaming and Removing Synonyms.

UNIT-V 15 Hrs

PL/SQL: Blocks – control structures – Integrating SQL in a PL/SQL Program. TRIGGERS: Components – Types – Creating, Modifying, Enabling/Disabling a Trigger, Deleting, Replacing a Trigger – Stored Procedures and Functions: Creating, Executing, Deleting a stored procedure – Functions, Packages: structure – Using Navigator – Referencing, Recompiling, Deleting a Package – Cursors – Transactions. Users, Privileges and Roles.

TEXT BOOK:

1. Alexis Leon & Mathews Lean, “Database Management Systems”, Vikas Publishing House Pvt Ltd.(UNIT I, II)
2. Jose A. Ramlho, “Learn Oracle 8i”, BPB Publications.(UNIT III, IV, V)

SEMESTER-IV

VISUAL BASIC

Instruction Hrs:60

Objectives:

1) Introduces computer programming using the Visual BASIC programming language with object oriented programming principles.

2) Emphasis is on event driven programming methods, including creating and manipulating objects, classes, and using object oriented tools such as the class debugger.

3) Upon completion, students should be able to design, code, test and debug at a beginning level.

12 Hrs

UNIT I

INTRODUCTION TO VISUAL BASIC: Introduction – Features of VB – Visual Basic Concept-Visual basic environment – Properties, Methods and Events – Debugging – Difference between .Exe And .Dll file. VB PROGRAMMING BASICS: Introduction – Keyword – DataTypes – Variables – Literals – Operators in VB – Some useful Function.

12 Hrs

UNIT II

WORKING WITH CONTROLS: Introduction – Intrinsic and Container Control – Working with Controls – Create Event Procedure – Manipulating Forms – Basic Controls – Control Arrays – Some useful Events – Activex Control – Object Linking and Embedding(OLE) – Dialog box.

12 Hrs

UNIT III

CONTROL STRUCTURE: Introduction – Control flow – Decision Structures – If...Then Statement – Select...Case Statement – Looping Structure – For...next – Do loop Structure – While...Wend – Problems with loop – Arrays – Dimension of an Array – Declaring Array – Static and Dynamic Array – Arrays within UDTs – Array within another Array.

12 Hrs

UNIT IV

PROCEDURES, FUNCTIONS AND MODULES: Introduction – Procedures – Sub Procedures(Sub-routines) – Function Procedure – Passing Parameters to Procedures – Property Procedure – Code module – Library Function.

12 Hrs

UNIT V

VB INTERFACE STYLE: Introduction – Interface Style – Creating Menus – Designing Menus – Popup Menus. ERROR HANDLING AND FILE HANDLING: Introduction – Types of Error – Handling Errors – Trap the Error – Handle the Error – File Handling. DATABASE CONNECTIVITY AND VISUAL DATABASE TOOLS: Introduction – DB Concepts – Data access
mechanism – DB Engine – VB Data Control – Company Database – Visual Database Tools.

Text Book:

Dr.Narendra Kumar, Shilpi Srivastava, Rajesh Chadhary, Hariom Pancholi. “VISUAL BASIC”, - VAYU EDUCATION OF INDIA – First Edition – 2011.

Reference Book:

1.Mohammed Azam, “Programming with VISUAL BASIC 6.0”, – VIKAS PUBLISHING HOUSE PVT LTD – First Reprint – 2009.

2.Gray Cornell, “VISUAL BASIC 6.0 FROM THE GROUND UP” - Tata McGraw Hill.

SEMESTER-IV
MARKETING

Instructional Hrs: 90
Objectives: 1. To make the students understand the marketing concepts.

2. To familiarize the students on marketing mix elements.

3. To enable the students to know the basic concepts of service marketing.

UNIT - I **18 Hrs.**

Meaning of Market and Marketing – Classification of Market – Evolution of Marketing – Significance of Marketing – Features of Modern marketing concept – Marketing Process.

UNIT - II **18 Hrs.**

Marketing Functions: Buying, Assembling and Selling. Transportation – Classification of Transport. Storage and Warehousing Functions – Classification of warehouses – Distribution Centers – Marketing Finance – Sources of marketing finance – Standardization and Grading – Advantages.

UNIT - III **18 Hrs.**

Marketing Mix: Elements of marketing mix – Channels of distribution – middlemen. Promotion Mix – Advertising & Personal Selling – Qualities of good salesmanship.

UNIT - IV **18 Hrs.**

Marketing of Agricultural Goods in India – Regulated Markets – Co-operative Marketing Society. Bureau of Indian Standards (BIS) – AGMARK –ISO.

UNIT - V **18 Hrs.**

Marketing of services – Characteristics of Services – Importance of service marketing – classification of services – Differences between Product Marketing and Services Marketing.

Recent Trends in Marketing: Relationship Marketing – Tele marketing – word of mouth marketing – SMS marketing.

Books Recommended:

1. Modern Marketing - Pillai and Bhagavathi
2. Marketing - N.Rajan Nair
3. Principles of Marketing and Salesmanship - C.Sinha
4. Introduction to Marketing - D.Amarchand
5. Marketing Management - Sherlakar

Note to Question Paper Setter:

Note 1:

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Section C contains 5 questions out of which 3 questions are to be answered. Each question carries 15 marks.

Note 2:

1. Section A: Not more than two questions from each unit.
2. Section B: Not more than two questions but atleast one question from each Unit.
3. Section C: One question from each unit.

B.C.A - SEMESTER-IV

PROGRAMMING LAB –V (RDBMS & ACCOUNTING PACKAGE)

Instructional Hrs : 60

Objectives : 1. To work with MYSQL programs
2. To work with SQL programs
3. To work with Tally

1. Write a MYSQL program for creating table for employee details and alter, update and delete the table to insert the values in the table.
2. Write a MYSQL program for creation of table creation of table and write in queries using built in functions
   (i) Comparison, logical and set operators.
   (ii) Sorting and grouping operators
   (iii) Built in functions for ceil, sysdate, sqrt, round, length, count and sum.
3. Write a SQL program to find the factorial of a given number using loop.
4. Write a SQL program to find the given number using sum of digits using while statement.
5. Write a SQL program to find the biggest among three numbers using goto statement.
6. Write a SQL program to check the given string is palindrome or not.
7. Write a SQL program for creating constraints Primarykey, not null and check the foreign key.
8. Write a SQL program for exception handling.
9. Write a SQL program for user defined exception
10. Write a SQL program to print the student mark list using cursor.
11. Write a PL/SQL program for printing the train ticket reservation.
12. Write a PL/SQL program for calculating the commission using procedure.
13. Write a PL/SQL program for sequence creation using recursive function.
14. Prepare a trial balance in Tally for the following and show profit & loss account and balance sheet.

    PARTICULARS AMOUNT
    1.Elangovan invested cash in business 2,00,000
    2.Paid into bank 50,000
    3.Purchase building 70,000
    4.Purchase goods 50,000
    5.Sold goods 60,000
    6.Withdrawn cash from bank 10,000
    7.Paid electric charges 300
    8.Paid salary1500

15. Prepare a trial balance in Tally for the following and show profit & loss account and balance sheet.

PARTICULARS AMOUNT

1.Started business with 10,000
2.Paid into bank 5,000
3.Bought furniture 500
4.Bought goods 300
5.Bought one type writer from Mr.Bala on credit 500
6.Sold goods 600
7.Sold goods to Mr.Anand & Sons on credit 1000
8.Bought goods from Ms.Radha & Sons on credit 20000
9.Paid telephone rent for 1 year 240
10.Paid Advertisement 100
11.sold goods to Mr.Das for each 800
12.paid salaries 800
13.Paid rent 100
14.Withdrawn from bank for private use 300

15. Bought one delivery van from Delhi motors & co which have to be Rs.10,000 need monthly installments each together interested at 9%first installment paid by cheque.

BCA - SEMESTER-IV

(Common for CS, BCA, IT & CT)

PROGRAMMING LAB - VI (VISUAL BASIC)

List of Programs:

1. Write a Visual Basic Program to find the sum of digits of the given number.
2. Write a Visual Basic Program to exchange items among two list boxes.
3. Write a Visual Basic Program to change the text foreground color and textbox Background color using scroll bar.
4. Write a Visual Basic Program to check whether the given string is palindrome or not.
5. Write a Visual Basic Program to replace the given character and to find the number of occurences of the given character.
6. Write a Visual Basic Program to find the factorial value and generate the fibonacci series for the given number.
7. Write a Visual Basic Program to move the text in the label box using slider control.
8. Write a Visual Basic Program to change the size of an image in a picture box.
9. Write a Visual Basic Program to use the various options of the common dialog boxes.
10. Write a Visual Basic Program for moving an image randomly within a window using timer control.
11. Write a Visual Basic Program to design a calculator for performing arithmetic Operations.
12. Write a Visual Basic Program to draw different shapes using menu editor.
13. Write a Visual Basic Program to view the employee details stored in a database table using MYSQL.
14. Write a Visual Basic Program to generate a telephone bill stored in a database table using MYSQL.
15. Write a Visual Basic Program to generate student mark sheet stored in a database table using MYSQL.

B.C.A – Semester – V

(Common for BCA & IT)

MULTIMEDIA SYSTEMS AND DESIGN

Instruction Hrs:90

Objectives:

1) Write and report stories across media platforms.
2) Explore and experiment with long-form Journalistic Writing.
3) Proficiency in using visual and audio tools to enhance story telling.

12 Hrs

UNIT I

Introduction:What is Multimedia-Definitions-Where to use Multimedia-Introduction to making Multimedia-Basic Software Tools-Text Editing and Word Processing Tools-Painting and Drawing Tools-3-D Modeling and AnimationTools-Image Editing Tools-Sound Editing Tools-Animation,Video and Digital Movie Tools.

12 Hrs

UNIT II

Text-The Power of Meaning-About Fonts and Faces-Using Text in Multimedia-Computers and Text-Font Editing and Design Tools-Hypermedia and Hyper Text.

12 Hrs

UNIT III

Sound-The Power of Sound-Multimedia System Sounds-MIDI versus Digital Audio-Digital Audio-Making MIDI Audio-Audio File Formats-Adding sound to Multimedia Projects-Production Tips.

12 Hrs

UNIT IV

Images before start to Create-Making Still Images-Color-Image File Formats-Animation-The Power of Motion-The Principles of Animation-Making Animations That Work.

12 Hrs

UNIT V

Video-Using Video-How Video Works-Broadcast Video standards-Integrating computers and Television-Shooting and Editing Video-Video Tips-Recording Formats-Digital Video.

Text Book:

1. Tay Vaughan, "Multimedia Making It Work" - Fifth Edition, 2001, Tata McGraw-Hill Publications(Unit I - V).

Reference Book:

1."Multimedia Computing,Communications & Application" - Ralf Steinmetz,Klara Nahrstedt, 14th Edition – 2013 , Pearson Education.
2."Digital Multimedia"- Nigel Chapman,Jenny Chapman, 2nd Edition, John Wiley & Sons Ltd., 2004.

SEMESTER-V
JAVA PROGRAMMING

Instructional Hrs: 60
Objectives: 1. To know about the concepts of Java fundamentals.

2. To know about the concepts of packages and Interfaces.

3. To know about the concepts of utilities and applets.

UNIT-I 12 Hrs

OBJECT ORIENTED FUNDAMENTALS AND JAVA REVOLUTION

Object Oriented Programming – Encapsulation – Inheritance – Polymorphism – Java Genesis – Characteristics – Java Programming Techniques – Reserved Words – Identifiers – Literals – Operators – Separators – Variables – Types – Arrays – Operator Precedence.

UNIT-II 12 Hrs

FLOW – CONTROL AND CLASSES

If – Else – Break – Switch – Return Statements – Looping – While – Do-While – For – Comma Statements – Continue – Classes – Declaration – Object References – Instance Constructors – New Operator – Method Declaration – Method Calling – This Operator – Constructors – Method Overloading – Inheritance – Super Class – Dynamic Method dispatch – Final Static – Abstract Classes.

UNIT-III 12 Hrs

PACKAGES AND INTERFACES

Packages – The Package Statement – Import Statement – Interface Statement – Implements Statement – Constructors – String Creation – String Concatenation – Character Extraction – Exception Handling Fundamentals – Types – Uncaught Exceptions – Nested try Statements – The Java Thread Model Priorities – Synchronization – Runnable – The Synchronized Statement – Dead Lock – Thread API Summary.

UNIT-IV 12 Hrs

UTILITES AND APPLETS

Dictionary Class – Hash Tables – String Tokenizer – Runtime – System Class – Comparison – Input and Output – File Directory – Filename Filter – File Streams.

UNIT-V 12 Hrs

Applets – HTML Applet Tag – Order of Applet Initialization –Sizing Graphics – Simple Graphics Methods – Drawline – Draw Arc – Font Manipulation – Simple Image loader – Image Observer – Summary.

TEXT BOOK:

1. Patrick Naughton, “The Java Hand Book”, Tata McGraw Hill Publishers Company Pvt. Ltd., 1996.
2. Kenny Chu “The Complete Reference Java”, Tata McGraw Hill Publishers Company Pvt. Ltd., 1997.

SEMESTER-V
SYSTEM ANALYSIS AND DESIGN

Instructional Hrs: 60
Objectives: 1. To know about design concept.

2. To know about Data flow between source & Destination.

3. To know about testing of security measures.

UNIT-I 12 Hrs

Characteristics of a system – Element of a systems – The system development life cycle, Recognition of need – Feasibility study – Analysis – Design – Implementation – Post Implementation – Maintenance – Prototyping – Multifaced role of systems analyst.

UNIT-II 12 Hrs

System planning and initial investigation – Dimensions Planning – Needs identification – Determining the use's formation requirements – Problem definition and Project initiation – Fact and Background analysis – Kinds of information procedure – information gathering tools.

Structured Analysis: Structure analysis tool – DFD – Data dictionary – Decision tree and Tables, Feasibility Study: System Performance definition – Feasibility consideration – Steps in feasibility analysis – Feasibility report, Cost Benefit analysis: Categories and procedures.

UNIT-III 12 Hrs

Process and stages of system design – Logical and Physical design – structure design – HIPO AND IPO charts – Audit consideration Input/output design. Forms design: Form classification – requirements of form – Copy types – Layout considerations.

UNIT-IV 12 Hrs

System testing: Need of system testing – Activity network. Quality assurance goals – Audit trial – Activity network for conversion – Role of DP auditor.

UNIT-V 12 Hrs

Post implementation review – Software maintenance – maintenance cost – System Security – Threats of security – Control measures – disaster / Ethics in system development.

TEXT BOOK:

1. System Analysis and design
   - Elias H. Awad
   - Galgotia publication 1987.

REFERENCE BOOKS:

Jeffrey A. Hoffer, "MODERN SYSTEMS ANALYSIS AND DESIGN", Pearson Education, Fourth Edition, 2008.

Alan Daniels, Don Yeates "BASIC SYSTEMS ANALYSIS", Galgotia Publications Pvt Ltd, Second Edition, 1986.

SEMESTER-V
COMPUTER NETWORKS

Instructional Hrs: 60
Objectives: 1. To know about reference models of network.

2. To know about design issues in different layers.

3. To know about various applications in network.

UNIT-I 12 Hrs

INTRODUCTION – Uses of Computer Networks – Network Hardware – Network software – Reference models – PHYSICAL LAYER – Guided transmission media, the Public switched telephoned network.

UNIT-II 12 Hrs

DATA LINK LAYER – Data link layer design Issues – Elementary data link protocols – Sliding window protocols.

UNIT-III 12 Hrs

NETWORK LAYER – Network layer design issues – Routing algorithms – Congestion control algorithms.

UNIT-IV 12 Hrs

TRANSPORT LAYER – The transport service – Elements of transport protocols – The internet transport protocols: UDP

UNIT-V 12 Hrs

THE APPLICATION LAYER – DNS – The Domain Name System – Electronic Mail – The World Wide Web.

TEXT BOOK:

Andrew S. Tanenbaum, “Computer Networks”, PRENTICE HALL OF INDIA Fourth Edition, [UNITS I – V]

SEMESTER-V
PROGRAMMING LAB - VII (JAVA Programming)

Instructional Hrs: 60

Objectives: 1. To know about the concepts of Floyd's triangle

2. To know about the concepts of stack operation and traffic signal.

3. To know about the concepts of file streams.

1. Write a java program to find the number of odd, even and prime numbers.

2. Write a java program to display Floyd's triangle upto the given limit.

3. Write a java program to (i) display the number in reverse order (ii) find the sum of the digits.

4. Write a java program to count the number of vowels in the given string.

5. Write a java program to arrange the given set of names in alphabetical order.

6. Write a java program to find matrix multiplication for the given numbers.

7. Write a java program to perform arithmetic and scientific operations.

8. Write a java program to perform stack operation using Interface.

9. Write a java program to display any two subject marks and sports marks of the student and find the total marks using Interface.

10. Write a java program to handle different Exceptions.

11. Write a java program for i) assigning Thread priority ii) executing Thread methods yield (), stop () and sleep ().

12. Write a java program for traffic light simulation using Applet.

13. Write a java program to display digital clock using Applet.

14. Write a java program to display different fonts using Applet.

15. Write a java program using File to get the string and display it using Byte stream classes.

B.C.A – Semester – V

(Common for BCA & IT)

PROGRAMMING LAB - VIII (Multimedia)

1.Write a program to design a Greeting card using Text.
2.Write a program to design an Invitation card.
3.Write a program to design a logo of our college.
4.Write a program to create a Rainbow an existing Images.
5.Write a program to create a Natural scene.
6.Write a program to animate Fish in a fish tank.
7.Write a program to animate blooming and budding flower .
8.Write a program to animate walking and dancing of a doll.
9.Write a program to animate shape change.
10.Write a program to animate shooting of two layers.
11.Write a program to building crash with animation.
12.Write a program to animate text.
13.Write a program to animate a flying butterfly.
14.Write a program to animate Natural scenery.
15.Write a program to demo a product with animation.

B.C.A - SEMESTER - VI

(Common for CS, BCA & CT)

WEB DESIGN

Instructional Hours: 90

Objectives : 1. To learn the concepts of static web design using HTML
2. To learn the concepts of dynamic web design using DHTML, SCRIPTING & ASP

UNIT I **18 Hrs**

Hyper Text Markup Language – HTML Tags, Structure of HTML program, Titles and Footers, Text Formatting, Heading Styles, Text styles and other text effects – Lists - Adding Graphics to HTML documents - Tables - Linking documents - Frames - Forms - Sample applications.

UNIT II **18 Hrs**

Introduction to Java Script- Java script in web pages, Advantages of Java script,Writing Java script into HTML, Basic Programming Techniques, Operators and expressions in Java script, Java Programming Constructs, Condition Checking, Loops , Built-in and User Defined Functions, Placing text in a Browser, Dialog boxes - Sample applications.

UNIT III **18 Hrs**

Dynamic HTML - Cascading Style Sheets - Font attributes, Color and background attributes, Text attributes, Border attributes, Margin attributes, List attributes - Class - using the <SPAN> tag-External style sheets - using the <DIV> tag - Sample applications.

UNIT IV **18 Hrs**

XML - Introduction to XML - DTD - XML Style Sheets (XSL) - Sample applications.

UNIT V **18 Hrs**

Introduction to ASP - Understanding Objects: Built-in objects: Application, Request, Response, Server and Session Objects - Cookies: Working with Cookies - Application of Cookies.

TEXT BOOKS:

1. Ivan Bayross, Web Enabled Commercial Applications Development Using HTML, JavaScript, DHTML and PHP, BPB Publications, 4th Revised Edition, 2010. [UNITS – I, II, III]

2. A.K.Saini and Sumint Tuli, “Mastering XML” , First Edition, New Delhi, 2002. [UNIT IV]

3. Ivan Bayross, “Practical ASP”, BPB Publiations, 2000, New Delhi. [UNIT V]

BCA - SEMESTER-VI

(Common for CS, BCA, IT & CT)

MAJOR CORE PROGRAMMING LAB - IX (WEB DESIGN)

Instructional Hours: 60

Objectives : 1. To develop static web design using HTML
2. To develop dynamic web design using DHTML, SCRIPTING & ASP

HTML

1. Write a HTML program to design invitation card using text level tags.
2. Write a HTML program to display transfer certificate form using list.
3. Write a HTML program to display student mark sheet using table.
4. Write a HTML program to design Gobi Arts & Science College website using hyperlinks.
5. Write a HTML program to design a website for product advertisement using frames.
6. Write a HTML program to design student Bio-data using forms.

DHTML

7. Write a Java Script program to display stars based on the user input.
8. Write a Java Script program to display Current Date and Time.
9. Write a DHTML program to design a web page for supermarket offers using Internal Style Sheet.
10. Write a DHTML program to design a web page for company profile using External Style Sheet.
11. Write a DHTML program to display dynamic content based on the mouse place operations.

XML

12. Write a XML program to display bank details using XSL style sheet.
13. Write a XML program to display employee details using CSS style sheet.
14. Write a XML program to display book details using CSS style sheet.

ASP

15. Write a ASP program to display the student’s details.

SEMESTER-VI
SKILL BASED PAPER
COMPUTER GRAPHICS

Instructional Hrs: 90

Objectives: 1. To learn about scan convertion of objects.

2. To learn on 2D & 3D transformations of objects.

3. To know about shading & color models.

UNIT-I 18 Hrs

Graphics Input Device - Storage Devices - Common Display Devices, Raster CRT – Scan Converting a Point, a Straight Line, a Circle, an Ellipse Filling - Side Effects of Scan Conversion.

UNIT-II 18 Hrs

2-D Transformations - Translation and Rotation - Matrix Representations and Homogeneous Co-ordinates - Composite Transformations - Reflection and Shear Transformation Commands - Windowing and Clipping - Windowing Concepts – Clipping Algorithms - Line, Area, and Text Blanking - Interactive Picture Construction Techniques, Positioning Methods, Rubber Band Methods.

UNIT-III 18 Hrs

3-D Transformations – Translation, Rotation & Scaling, Three Dimensional Concepts – Co-Ordinate Systems, Display Technique, Graphics Packages - Three Dimensional Representations - Polygon Surfaces, Curved Surfaces.

UNIT-IV 18 Hrs

Hidden Surface and Hidden Removal Classification of Algorithms - Back-Face, Depth - Buffer, Scan Line, Depth-Sorting, Area Subdivision, Octree, Hidden Line Elimination, Curved Surfaces.

UNIT-V 18 Hrs

Shading and Color Models - Modeling Light Intensities -. Displaying Light Intensities - Surface Shading Methods - color Models Properties of Light, Standard Primaries, Intuitive Color Concepts, RGB Color Model, HSV Color Model–HLS Color Model.

TEXT BOOK:

Theory & Problems of Computer Graphics
- Roy A. Plastock & Gorden Kalley
- Schaum's Outline Series — 1987 (Unit- I)

Computer Graphics
- Donald Hearn & M. Pauline Baker
- Prentice Hall of India – 1983(Unit 2, 3, 4, 5)
- First Edition

B.Sc – CS / B.Sc – IT /BCA SEMESTER – VI

B.Sc – CT SEMESTER - III

PROGRAMMING LAB – X (COMPUTER GRAPHICS)

Instructional hours: 60

Objectives:

1. To learn about graphical algorithms with programming.
2. To learn about displaying principles.
3. To learn fundamental graphical functions in C language.

1. Write a C program to plot a Line using DDA Line Drawing Algorithm.
2. Write a C program to plot a Line using Bresenham's Line Drawing Algorithm.
3. Write a C program to plot a Line using Bresenham's Circle Drawing Algorithm.
4. Write a C program to plot a Line using Mid Point Circle Drawing Algorithm.
5. Write a C program to display a Man Walking.
6. Write a C program to Clip a Line Using Line Clipping Algorithm.
7. Write a C program for Flag Hoisting.
8. Write a C program for Text Animation.
9. Write a C program to display different shapes.
10. Write a C program for Eye Blinking.
11. Write a C program to display a Chess Board.
12. Write a C program to display a clock.
13. Write a C program for 2D Translation and Scaling about fixed point.
14. Write a C program for 2D Rotation about fixed point.
15. Write a C program for movement of an object using 3D object representation.

BCA / B.Sc CS / B.Sc IT / B.Sc CT - SEMESTER VI

PROGRAMMING WITH PHP

Instructional Hrs: 90

Objectives: 1. To know about the PHP and MySQL basics.
2. Working with Database for PHP scripts.
3. To develop a dynamic web page by using PHP.

UNIT-I **18 Hrs**

Introduction of PHP: What is PHP? Advantages of PHP –**PHP Language structure:** The Building blocks of PHP – Variables – Data types – type casting – Operator and Expressions – Constants - **Introduction to MYSQL:** Data types – table creation - insert, select, replace, update and delete commands – using where in your Queries.

UNIT-II **18 Hrs**

Flow control function in PHP: Switching Flow – Loops – code block and browser output -**Working with arrays:** Array definition – creating arrays – Array related functions – **working with function**: Definition - calling functions – Defining a function – returning values from user defined functions – variable scope – static statement – more about arguments – testing for existence of a function.

UNIT-III **18 Hrs**

Working with Strings, Date and Time: Formatting strings with PHP – Investigating strings in PHP – Manipulating strings with PHP – using Date and Time functions– **Working with objects:** Creating an object – properties of object – object methods – constructors - Object Inheritance.

UNIT-IV **18 Hrs**

Working with forms: Creating a simple input form – Accessing form – combining HTML and PHP code on a single page – using hidden fields to save state – redirecting the user – sending mail on form submission - working with file uploads – **Working with cookies and user sessions:** Introducing cookies – setting a cookies– Deleting a cookie – session function – starting a session - working with session variables – passing session IDs - Destroying sessions and unsetting variables.

UNIT-V **18 Hrs**

Working with files and Directories: Including files with include() – validating files - Creating and Deleting file – opening a file for writing, reading and appending – reading from files – Writing or appending to a file - working with directories - Opening pipes to and from processes using popen()- Running commands with exec(), system() or passthru() – **Working with images:** Image creation process – Drawing a new image – Creading pie charts - modifying existing images – using images created by scripts – **Working with XML:** Accessing XML in PHP using DOM – Using simple XML function in PHP.

TEXT BOOKS:

Julie C.Meloni, “PHP, MYSQL and Apache”, Dorling Kindersley (India) Pvt. Ltd., 2005.

REFERENCE BOOKS:

1. Jeremy Allen & Charless Hornberger “PHP, Apache, Mysql, Web development”, Wiley Publications, 2006.
2. Vikram, Vaswani, “A Beginner’s Guide PHP” Tata McGraw Hill, Fourth Edition, 2005.

BCA / B.Sc CS / B.Sc IT / B.Sc CT - SEMESTER VI

PROGRAMMING LAB – XI (PHP)

Instructional Hrs: 60
Objectives: 1. It helps the create a web page designing

2. To know about Database connectivity between MYSQL & PHP.

3. TO know about cookies & session concepts.

1. Write a PHP program to validate the text box.
2. Write a PHP program to draw different shapes.
3. Write a PHP program to perform the string manipulation.
4. Write a PHP program to perform the file uploading.
5. Write a PHP program to perform the user registration form using HTML tags.
6. Write a PHP program to display the date and time using AJAX.
7. Write a PHP program to check the user login.
8 Write a PHP program to create a college website.
9. Write a PHP program for cookies and session concepts.
10. Write a PHP program to perform the file read, write, open and append operation.
11. Write a PHP program to create a library information using inheritance.
12. Write a PHP program for online examinations.
13. Write a PHP program to send the mail using mail concept.
14. Write a PHP program for supermarket.
15. Write a PHP program for online recharging.

B.C.A.

Question paper pattern:

SECTION-A

Answer all questions. No choice. One question from each unit. Each question carries two Marks. (5 x 2 = 10)

SECTION-B

Short answer questions of either or type — 5 questions — One question from each unit. (5 x 4 = 20)

SECTION-C

Essay type questions — Answer any three out of five — One question from each unit. (3 x 15 = 45)

ALLIED OPTIONAL
For students of other than Computer Applications Department
SEMESTER-IV
FUNDAMENTALS OF COMPUTERS

Instructional Hrs: 90
Objectives: 1. To know about knowledge and understanding of various software and hardware components of computer.
2. Describe the fetch-execute cycle of a computer.
3. To understand the different types of information which may be stored within a computer memory.

UNIT-I **18 Hrs**

Introduction – Generations of Computers – Classification of Computers – Computing Concepts – The Computer System – Applications of Computers.

Computer Organization and Architecture – Introduction – Central Processing Unit – The Bus – Instruction Set.

UNIT-II **18 Hrs**

Memory and Storage Systems – Introduction – Memory Representation – RAM – ROM – Storage Systems – Optical Storage systems – Magneto Optical Systems – Solid – state Storage Devices – Storage Evolution Criteria.

UNIT-III **18 Hrs**

Input Devices: Introduction – Keyboard – Pointing Devices – Scanning Devices – Optical recognition Devices – Digital Camera – Voice Recognition System – Media Input Devices.

Output Device: Introduction – Display Monitors – Printers – Impact Printers – Non – impact Printers – Plotters – Voice Output Systems – Projectors – Terminals.

UNIT-IV **18 Hrs**

Computer Architecture: Interconnection of Units – Processor to Memory Communication – I/O to Processor Communication – Interrupt Structure – Bus Architecture – Multiprogramming – Processor Features – RISC – Virtual memory.

Microcomputers: Ideal and Actual Microcomputer – Memory systems – Configuration – Evolution – Special Purpose – Smart Cards and RFID

UNIT-V **18 Hrs**

Voice and Data Communications: Types of Communications – Characteristics – Allocation – Physical Communication Media – PSTN – Cellular Communication System – Establishing Communication Paths – ATM Networks.

TEXT BOOKS:

E. Balagurusamy, “FUNDAMENTALS OF COMPUTERS”, Tata McGraw Hill, First Edition, 2009. (Unit I – III)

V. RAJARAMAN, “FUNDAMENTALS OF COMPUTERS”, Prentice – Hall India, Fourth Edition, 2004. (Unit IV – V)

REFERENCE BOOKS:

Priti Sinha, “COMPUTER FUNDAMENTALS”, BPB Publications, Third Edition, 2003.

B.Ram, “COMPUTER FUNDAMENTALS”, New Age International Pvt. Ltd., Third Edition, 2003.

Question paper pattern

PART-A

Answer all questions. No choice. One question from each unit. Each question carries two marks.

(5 x 2 = 10)

PART-B

Short answer questions of either or type – 5 questions – One question from each unit.

(5 x 4 = 20)

PART-C

Essay type questions – Answer any three out of five – One question from each unit.

(3 x 15 = 45)

ALLIED OPTIONAL
For students of other than Computer Applications Department
SEMESTER IV
SYSTEM ANALYSIS AND DESIGN

Instructional Hrs: 90
Objectives: 1. To provide computer knowledge to other department students.

2. To improve the knowledge about S/W packages.

3. To know how to purchase S/W packages in market.

UNIT-I **18 Hrs**

Characteristics of a system – Element of a systems – The system development life cycle, Recognition of need – Feasibility study – Analysis – Design – Implementation – Post Implementation – Maintenance – Prototyping – Multifaced role of systems analysis.

UNIT-II **18 Hrs**

System planning and initial investigation – Dimension of Planning – Needs identification – Determining the user's information requirements – Problem definition and Project initiation – Fact and Background Analysis – Kinds of information procedure – information gathering tools.

Structured Analysis: Structure analysis tools – DFD – Data Dictionary – Decision tree and tables, Feasibility study: System performance definition – Feasibility considerations – steps in feasibility analysis – Feasibility report, Cost Benefit analysis: Categories and procedures.

UNIT-III **18 Hrs**

Process and stages of system design – Logical and Physical design – structure design – HIPO and IPO charts – Audit considerations, Input/output design, Forms design: For classification – requirements of form – copy types – Layout considerations

UNIT-IV **18 Hrs**

System testing: Need of system testing – Activity network, Quality assurance goals – Audit trial – Activity network for conversion – Role of DP auditor

UNIT-V **18 Hrs**

Post implementation review – Software maintenance – Maintenance cost – System Security – Threats of security – Control measures – disaster/Ethics in system development.

TEXT BOOK:

Elias H.Awad, “SYSTEM ANALYSIS AND DESIGN”, Galgotia Publication, Second Edition, 1987. (Unit I – V)

REFERENCE BOOKS:

Jeffrey A.Hoffer, “MODERN SYSTEMS ANALYSIS AND DESIGN”, Pearson Education, Fourth Edition, 2008.

Alan Daniels, Don Yeates, “BASIC SYSTEMS ANALYSIS”, Galgotia Publications Pvt Ltd, Second Edition, 1986.

Question paper pattern

PART-A

Answer all questions. No choice. One question from each unit. Each question carries two marks.

(5 x 2 = 10)

PART-B

Short answer questions of either or type – 5 questions – One question from each unit.

(5 x 4 = 20)

PART-C

Essay type questions – Answer any three out of five – One question from each unit

(3 x 15 = 45)

MAJOR OPTIONAL
For students of other than Computer Applications Department
SEMESTER - V
DESKTOP PUBLISHING

Instructional Hrs: 60

Objectives: 1. To know about print media and its usage.
2. To know about various features of page maker.
3. To know about various utilities in page maker.

UNIT - I **12Hrs**

Introduction - The PageMaker screen - The rulers - Repositioning the zero point - Viewing the page - Working with a publication - Drawing tools: Lines, Boxes, Ellipse, Polygon - Selecting, Deleting , Moving and Resizing elements - Grouping - Ungrouping - Power pasting - Rotation tools.

UNIT - II **12Hrs**

Importing Graphics - Text Tool - Manipulating Text - Default Text Settings - Transformations - Skewing - Reflecting - Cropping And Resizing With The Control Palette - Locking Elements - Importing Text.

UNIT - III **12Hrs**

Master Pages - Paragraph Specification - Windows and orphans - keep with Next Command - Columns and Page Breaks - paragraphs Rules - Indents/ Tabs- Hyphenation - Text Wrap.

UNIT - IV **12Hrs**

Style Sheets - Long Documents Features - Frames: Frames Tools - Adding Text Content to a Frame - Frame Options

UNIT - V **12Hrs**

Utilities - Layers: Layer palette - creating a new layer - Assigning an object to a layer - Layers in Action.

TEXT BOOK:

Scott Basham, “PAGEMAKER IN EASY STEPS “, Dreamtech press, Second Edition, 2009. (Unit I - V)

REFERENCE BOOKS:

1.) Satish Jain, “TRAINING GUIDE: PAGEMAKER 7”, BPB Publications, First Edition, 2002.
2.) David Webster, Tony Webster, “INTRODUCING PAGEMAKER 3”, BPB Publications, First Edition, 1989.

B.C.A

MAJOR OPTIONAL

PROGRAMMING LAB - DESKTOP PUBLISHING

Instructional Hrs: 30

Objectives : 1. To develop the skill of designing in Print media.

2. To know about various concepts of page maker.

3. To know the various tools in page maker.

1. Create a page maker design for text tools.
2. Create a page maker design for different drawing tools.
3. Create a page maker design for threaded text.
4. Create a page maker design for grouping and ungrouping.
5. Create a page maker design for importing graphics.
6. Create a page maker design for rotating and locking.
7. Create a page maker design using column guides to create a newspaper design.
8. Create a page maker design for cropping an image.
9. Create a page maker design for combining effects.
10. Create a page maker design for image control effects.
11. Create a page maker design for table editor.
12. Create a page maker design for adding graphic content to a frame.

Question paper pattern

PART - A

Answer all questions. No choice. One question from each unit. Each question carries two marks. (5 x 2 = 10)

PART - B

Short answer questions of either or type - 5 questions - One question from each unit. (5 x 4 = 20)

PART - C

Essay type questions - Answer three out of five - One question from each unit. (3 x 15 = 45

MAJOR OPTIONAL
For students of other than Computer Applications Department

SEMESTER - V
OFFICE AUTOMATION TOOLS

Instructional Hrs:60

Objectives: 1. To work on Linux environment.
2. To work on presentation & spread sheet through impress & Calc.
3. To work on documents in writer.

UNIT - I **12Hrs**

LINUX: Basic of Linux - Getting started with Linux, Working with K Desktop Environment, Working with Files and Directories.

UNIT - II **12Hrs**

GIMP: Introducing GIMP, Working with Tools, Working with Layers and text.

UNIT - III **12Hrs**

Writer: Getting started with openOffice.org Writer, Editing Documents in Writer, Formatting the Document.

UNIT - IV **12Hrs**

Impress: Getting started with openOffice.org Calc, Working with Presentations.

UNIT - V **12Hrs**

Calc: Getting started with openOffice.org Calc, Working with Functions and Operators, Working with the OpenOffice.org Calc Layout.

TEXT BOOK:
Vikas Gupta, "LINUX AND OPEN OFFICE COURSE KIT," Dreamtech press, First Edition, 2010. (Unit I - V)

REFERENCE BOOKS:
1.) Andy Channelle, "BEGINNING OPEN OFFICE 3: FROM NOVICE TO PROFESSIONAL," Apress, First Edition, 2009.
2.) Greg M.Perry, "SAMS TEACH YOURSELF OPEN OFFICE. ORG ALL IN ONE", Prentice Hall, First Edition, 2004.
3.) Jeffery A. Riley, "INTRODUCTION TO OPEN OFFICE. ORG", prentice hall, First Edition, 2009.
4.) Gurdy Lette, Ellen Finkelstein, Mary Lette, "OPEN OFFICE.ORG FOR DUMMIES", Wiley publishing, Inc, First Edition, 2004.

MAJOR OPTIONAL
SEMESTER - V
PROGRAMMING LAB - OFFICE AUTOMATION TOOLS

Instructional Hrs: 30

Objective: The open office provides real time elaborated examples and procedures which help you in mastering open source technologies.

1. Create an Open Office Writer application with 10 lines and perform various task such as Bold, Italic, Underline, Font - Size, Color, Text Effects, Background color, Spell Check, Auto Correct, Line Spacing, Header & Footer, Page Numbering, Bullets & Numbering and Change Case.

2. Design an Invitation Card in Writer.

3. Design a Time Table in Writer.

4. Perform Mail - Merge for many companies in different cities through Writer.

5. Maintain a worksheet of Student Mark List for each semester in Open Office Calc.

6. Create a Chart for Student Mark List in a worksheet in Calc.

7. Create Consolidated Mark sheet for three semesters in Calc.

8. Maintain the sales details for the company for six days in a week for the branches and perform the following operations in calc.

    a) sales details day wise
    b) sales details product wise
    c) sales detail branch wise
    d) highest sales detail in product wise

9. Develop a table for Saving Scheme in Calc and calculate the interest amount using the principle amount, number of years and rate of interest.

10. Create a open office calc program for simple functions.

11. Create a presentation for your college details using open office impress.

12. Create a presentation for bike advertisement using open office impress.

13. Create a presentation for news paper advertisement using open office impress.

14. Create a presentation for paper presentation methods using open office impress.

15. Design a greeting cards using GIMP tools.

Question paper pattern

PART - A

Answer all questions. No choice. One question from each unit. Each question carries two marks. (5 x 2 = 10)

PART - B

Short answer questions of either or type - 5 questions - One question from each unit. (5 x 4 = 20)

PART - C

Essay type questions - Answer three out of five - One question from each unit. (3 x 15 = 45