

SEMESTER - I**1 BCA-I : FUNDAMENTALS OF COMPUTER AND PROGRAMMING****Max. Marks-100****Min. Marks - 40****Unit-1: COMPUTER INTRODUCTION TO COMPUTER**

Computer system characterization & capabilities.

Speed, Accuracy, Reliability, Memory Capability, Repeatability.

COMPUTER HARDWARE & SOFTWARE: Block Diagram of a Computer, Different Types of Software's.

TYPES OF COMPUTER: Analog Digital & Hybrid, General and Special Purpose Computers. COMPUTER GENERATIONS: Characteristics of Computer Generations Computer Systems Micros, Minis & Mainframes. INTRODUCTION TO PC: The IBM Personal Computer, Type of PC systems PC, XT & AT, Pentium PCs, Limitations of Micro-computer.

UNIT-II: COMPUTER ORGANIZATION

INTRODUCTION TO INPUT DEVICES: Categorizing Input Hardware, Keyboard, Direct Entry-card Reader, Scanners, Devices- O.M.R. Character Scanner, Character Readers, MICR, Smart Cards, Voice Input Devices, Pointing Devices-Mouse, Light Pen.

STORAGE DEVICES : Storage Fundamentals, Primary and Secondary Storage, Data Storage and Retrieval Methods-Sequential, Direct & Indexed & Sequential, Tape Storage and Retrieval Methods Tape Storage Devices, Characteristics & Limitation, Direct Access Storage for Microcomputers- Hard Disks, Disk Cartridge, Direct Access Storage Devices for Large Computer Systems, Mass Storage Systems and Optical Disks CD ROM. Retrieval Methods-Sequential, Direct & Indexed & Sequential, Tape Storage and Retrieval Methods Tape Storage Devices, Characteristics & Limitation, Direct Access Storage for Microcomputers- Hard Disks, Disk Cartridge, Direct Access Storage Devices for Large Computer Systems, Mass Storage Systems and Optical Disks CD ROM.

UNIT-III DATA PROCESSING: DATA, Data Processing system, Storing Data, Processing data.

CENTRAL PROCESSING UNIT: The Microprocessor Control Unit, ALU, Register, Buses Main Memory, Main Memory (RAM) for Microcomputers, Read-only Memory.

COMPUTER OUTPUT: Output Fundamentals, Hardcopy Output Devices, Impact printers, Non-Impact printer's plotters, Computer Output Microfilm/Microfiche (COM) System, Softcopy output Devices, Cathodes Ray Tube and Flat Screen Technologies.

UNIT-IV : COMPUTER SOFTWARES

SYSTEM SOFTWARES System Software Versus Application Software, Type of System Software's, Introduction Types of Operating System Programs, Booting Loader, Diagnostic Tests, Operating system executive, BIOS, Utility Programs, File Maintenance, Language processors, Assembler, Compiler And Interpreter.

APPLICATIONS SOFTWARE: Microcomputer Software, Interacting with System, Trends in PC Software, Types of Application Software, Difference Between program and packages.

UNIT - V

COMPUTER LANGUAGES : Computer Programming Languages, Types of Programming Languages, Generations of programming Languages Development Low Level Versus High Level Language, Machine Code (or Machine Language) Advantages of using Machine Code, Disadvantages of using Machine Code, Assembly Language, Assembler, Advantages of Assemble Languages, Limitations of Assembly Languages. The Need for Assembly Languages.

HIGH LEVEL LANGUAGES : Development of Higher Level Languages, Machine Independence and portability, Advantages of High Level Languages, problem Oriented Languages. Procedure Oriented Languages, Compilers and Interpreters, Examples of some High Level Languages, object Oriented Programming. Fourth Generation Languages, Difference Between a Higher Level & Fourth Generation Languages, Merits and Demerits of 4 GLS, Type of 4 GLS. The Future of 4-GLS, Few popular 4-GLS, Application program Generators (APGS).

TEXT BOOKS:

1. Computer Today by S.K.Bansandra: Galgotia publication Pvt.Ltd. New Delhi.

Books:

1. Computer Fundamentals By P.K. Sinha

2. O' Level Module 1 by V.K. Jain
3. O' Level Mode Simple By Satish Jain
4. Essential of IT (Hindi Medium) – Pragya Publication

Note : There Shall be Ten Questions in the question paper, Two questions from each unit. The student will have to Attempt five questions, selecting one question from each unit.

1 BCA 2: OPERATING SYSTEMS (DOS & WINDOWS, UNIX)

Max. Marks-100
Min. Marks - 40

UNIT-1: (DOS)

Introduction - History & Version of Dos.

Dos basics-Physical structure of disk, drive name, FAT, file & directory structure and naming rules, Booting process, DOS system files.

Dos Commands – Internal – Dire, MD, CD, RD, COPY, DEL, REN, VOL, DATE, TIME CLS, PATH, TYPE.

External- CHKDSK, XCOPY, PRINT, DISKCOPY, DISCOMP, DOSKEY, TREE, MOVE, LABEL, APPEND, FORMAT, SORT, FDISK, BACKUP, EDIT, MODE, ATTRIB HELP, SYS.

UNIT-II: (WINDOWS 95/98)

Hardware requirements of Windows, Windows, Windows concepts, features, windows structure, Desktop, Taskbar, Start Menu, My Computer, Recycle bin.

Windows Accessories: Calculator, Notepad, Paint, WordPad, Character map.

Windows Explorer: Creating folders and other Explorer facilities.

Entertainment, CD Player, DVD Player, Media Player, Sound Recorder, Volume Control.

UNIT- III

An overview of UNIX and historical perspective, understanding UNIX commands arguments, options and filename, Combining commands, Entering a command before previous command has finished (pg. 1-38).

UNIT-IV

General purpose utilities – cal, data, cal, who, try, uname, password, lock, ehco, bc, time, spell, ispell, file, system, ordinary files, directory files, device files, special files pathname, mkdir, rmdir, ls(with options), cd (pg.41-67).

UNIT-V

Handling ordinary files displaying and creating files, copying, deleting, renaming files, pattern matching, painting a files, line, word and character counting, comparing two files, finding what is common.

The shell, sh command pattern matching (wild cards), Quoting redirection (pg.69-93).

TEXT BOOKS:

1. Annurag Seetha, Introductions to Computers and information Technology, RAM Prasad & Sons, Bhopal (UNIT-1)
2. Rajeev Mathur, Learning Window98 step by step, BPB Publication. (UNIT-II)
3. Sumitabh Das, UNIX Concepts & Applications, Tata McGraw Hill 1998 (UNIT-III, IV, V)

REFECENCE BOOKS-

1. Rajiv Mathur, Quick Reference DOS 6.2 Galagotia Publication.
2. Alan Simpsor, Easy Guide to Windows, BPB.
3. Vishnu Priya Singh & Meenakshi Singh, Windows 95, Asian Publishers.

1 BCA 3: MATHEMATICAL FOUNDATIONS**Time: 3 Hrs****Max. Marks-100
Min. Marks - 40**

UNIT-1 : Boolean Algebra, Principle of Duality, Properties of Boolean Algebra, Inclusion Relation in Boolean Algebra Boolean Subalgebra, , Partial, Order Relations, Lower and Upper Bound Total order, Algebra of Propositions ALGBER OF ELECTRIC CIRCUITS: Switching Circuits Design of Simple Automatic Control System, Boolean Function of Fundamental Forms: Minimal Boolean Functions, Disjunctive Normal Form, Bool's Expansion Theorem, Conjunctive Normal Form, Logic Circuits Many Terminal Network, Some Definitions Related to Graph, Tree.

UNIT-II : SET & OPERTIONS ON SETS : Union, Intersection, Dis joint Sots, Difference, Symmetric Difference, Complement Lwas of Operations on Sets, Venn Diagram, Generalized De Morgan's Laws, Generalized Form of Distributive Laws.

CARTESTAN PRODUCT OF SETS AND RELATIONS: Cartesian product of two sets Relation, Binary relation, Equip Equivalence relation. Equivalence classes of equivalence sets. Properties of equivalence classes, Partition of a set. Function or mapping kinds of mapping. Some special types of mapping, Inverse function or Inverse mapping, Binary operations, Types of binary operations, Countable sets.

UNIT-III ELEMENTARY DIFERENTIATION :

Continuity and object of differential calculus. Related quantities, Variables, Function, functions of different kinds, Limits some important, expansions some theorems of limits. Some important limits, Right Hand and Left Hand limits.

Continuity, Kinds of dis-continuity, Properties of continuous functions. Basic concept of derivative of a function. Right hand and Left hand derivatives, Differentiability, condition of finite derivatives Nth derivative, Rolle's theorem. First and Second Mean value theorems, Taylor's theorem, Maclaurin's theorem.

UNIT-IV ELEMENTARY INTEGRATION :

Anti-derivative, indefinite integral, definite integral, Fundamental rules of integration, Standard formulae, Integration by substitution, Extended forms of fundamental formulae, Some important integrals, integration by parts.

UNIT-V Partial differentiation, partial differentiation of Higher order. Homogeneous functions, Total differentiation, Differentiation of composite & Implicit functions. Changes of variables Taylors Theorem for several Variables.

Simple problems of maxima & minima.

BOOKS :

1. A Text books of Discrete Mathematics by D.C. Agrawal, Thakur & Shrivastava.
2. A Text books of Elementary calculus By D.C. Agrawal, Thakur & Harikishan.
3. A Text Book of Vector Calculus & Geometry By D.C. Agrawal.

4. A Text Book of Discrete Mathematics By Thakur & Sharma.
5. Calculus : By Thakur & Harikishan.
6. Differential Calculus : BY Gorakh Prasad.

Note : The shall be ten question in the question paper two question from each unit. The students will have to attempt five question, selecting one questions from each unit.

1 BCA 4 : PROGRAMMING IN C

Time : 3 Hrs

Max. Marks-100

40

Min. Marks -

UNIT-I: Introduction, Data Types and operators identifiers and keywords, constants, types of operators, type conversion, writing a C-Program, variable declaration, C-Statements, Input and Output functions (pg 1-38)

UNIT-II: Control statement, conditional expressions if statement, if-else statement, case and switch statement, loop-statements: For loop, while loop, do while loop, Break, continue and go to statements (pg.39-69)

UNIT-III: Functions and program structure, Function definition, Type of functions, local and global variables, scope of variable, multifunction programs, Recursive functions. (pg.70-98)

UNIT-IV: Arrays Notation and declaration, initialization, multidimensional and character arrays, pointers, Declarations, Pointer arithmetic, pointers and functions. (pg.99-142)

UNIT-V: Preprocessors and macros, Header files (brief introductions only), structures, Declarations, initialization and use of structures in a C-Program function and structures, Array of structures Arrays within a structures. Unions. (pg.159-161, 168-169, 197-220, 230-233)

Text Book :

1. D. Ravichandran, programming in C New Age International, 1996.
2. E. Balaguruswamy, Tata McGraw Hill Pub.

Reference Books:

1. Y.Kanitkar, Let us C. BPB Publication, 4th Ed. 2002.
2. Rajiv Dharaskar, Hidden Treasure of C, BPB Publication, 1995.
3. Shridhar B. Dandin, Programming in C – Pragya Publication (Hindi Medium)

1 BCA 5: COMMUNICATIVE ENGLISH**Time : 3 Hrs****Max. Marks-100****Min. Marks - 40****UNIT-1: COMPREHENSION**

Comprehension includes understanding the language by reading and listening for that some interesting current passages of poems will be given to the student Individually or in Group and they are allowed to Read in the class by giving sufficient time. Then the comprehension will be tested checked by formulations various questionnaire in different ways such as objective type, Fill in the Blanks or small answer question Similarly the passages or poems will be read out in the class and the Question shall be asked Verbally to evaluate level of Comprehension. This would be to enhance their listening capability: Listening Comprehension: Talks. Reports, Poems.

UNIT-II SECTION: B WRITING SKILLS

In this section the student will be exposed to various Techniques of writing such as paragraph. Report composition, Diary Entry, Application and letters. This count temporary Indian writing on culturally familiar topics and would promote inferential and Analytical learning apart from literary application.

B-1 PARAGRAPH WRITING

1. Objective
2. Introduction
3. The topic sentence
4. Developing the topic
5. Coherence Transitional devices.
6. Punctuation Marks- (I) Need (II) Importance.

B-2 COMPOSITION WRITING:

1. Objective
2. Introduction
3. A Model Composition for study
4. Type of Composition

1. Expository
2. Argumentative
3. Narrative

4. Descriptive
5. Tech Techniques of writing & good composition.

UNIT-III**B-3 NOTE MAKING TALKING**

1. Objective
2. Introduction
3. How to read
4. Specimen notes
5. Reduction devices
6. Heading and Subordinate points

B-4 REPORT WRITING

1. Reporting Events
2. Reporting Interviews
3. Reporting Surveys: Objective, introduction, definite stages in writing a report, types of report, key words.

UNIT-IV

B-5 APPLICATION: On given circumstances, Format of the application.

B-6 LETTER WRITING: Personal letters, Business letters, objectives, Introduction, Format of the latter, How to write effective letters.

UNIT-V: FUNCTIONAL GRAMMER

Grammar will be taught in a functional, Intergrated and informal way giving stress more on. The usage rather than defining them Maximum possible exercises will be given.

CORRECT USAGE: Parts of speech, Agreement of the verb with the subject, Subject and predicate.

TRANAFIRMATONS OF SENTENCES : Interchange of Active and passive voice, Interchange of affirmative and negative sentences, Interchange of Exclamative and assertive sentences, interchange of parts of Speech.

BOOK:

1. English Grammar by Wren & Martin
2. The Most Common Mistakes in English Usage the Addition by Thoms Ellat.

SECOND SEMESTER**2-BCA-1 COMPUTER SYSTEM ARCHITERCTURE**

Time : 3 Hrs

Max. Marks-100

Min. Marks - 40

UNIT-I : DATA REPRESENTATION- Data types, Number Systems: Binary number system, Octal & Hexa – Decimal Number system. Fixed-point representation : 1s & 2s complement, Binary fixed-point representation. Arithmetic operation on binary numbers, overflow & underflow.

UNIT-II : DIGITAL LOGIC CTRCUICTS : Logic gates, AND,OR,NOT,GATE & their truth tables, NOR NAND & XOR gates. BOOLEAN ALGEBRA : Demorgan's theorem.

MAP STMPLOCATION : Minimization techniques, X, Map. Sum of product & product of sums. **COMBINATIONAL & SEQUENTIAL CIRCUITS :** Half address full address, full subtractor, Flip-Flops-RS, & T Flip-Flops, Shift registers RAM AND ROM.

UNIT-III : OPU ORGANTSATIONS- ALU & CONTROL CIRCUIT : Idea about arithmetic circuit program control, Instruction sequencing. **INTRODUCTION TO MICROPROCESSOR:** Microprocessor Architecture (3086), System buses, Register, program counter, Block diagram of a Micro Computer System. Microprocessor control signals, Interfacing devices. **INTROCUTION TO MOTHER BOARD:** Idea about different cards and their functions, Smps.

UNIT-1V : INPUT-OUTPUT ORHANTSATION : I/O interface, properties of Simple I/O Devices and their controller, Isolated versus memory-mapped I?O, Modes of Data Transfer, Synchronous & A synchronous Data Transfer Handshaking, A synchronous serial transfer, I/O processor.

UNIT-V : MEMORY ORGANISATION : Auxiliary memory, Magnetic drum, Disk & Tape Semi conductor memories, Memory Hierarchy, Associative memory, Vitual memory, Address space & memory space, Address Mapping, Page

table, Page replacement, Cache memory, Hit Ratio, Mapping techniques, Writing into cache.

BOOK : Computer System Architecture by : M. MORRIES MANO

NOTE : There shall be ten question in the questions paper, two questions from each unit. The student will have to attempt five questions selecting one question from each unit.

2 BCA-2 : GRAPHICAL USER INTERFACE PROGRAMMING WITH VISUAL BASIC

Time : 3 Hrs

Max. Marks-100
Min. Marks - 40

UNIT-1 : IDE OF VB- Project Explorer, Toolbox, Properties window, Form Designing, Form Layout, Immediate Window, Visual Development and Event-Driven Programming, Event Driven Programming Methods and Events Concept of VB Project. Type of VB Project Creating Forms and Code Modules, Running the Application, showing and Hiding, Controlling one Forms within another.

UNIT-II : Variables- Declaring Variables, Type of Variables Scope and Lifetime of Variables, Constants, Arrays Type of Array, Control Array, Dynamic Array, Collections, Procedures – Subroutine. Functions, Control Flow Statements and Conditional Statements, Loop Statements, Designing Menus and Popup Menus, Using Standard Modules.

UNIT-III: The Text Box Control- Text Selection, Search and Replace Operations, The List Box and Combo Box Controls, The Scroll Bar and slider Controls, Using the Common Dialog Box Controls, Color Common Dialog Box. Font Common Dialog Box, The File Open and Save Common Dialog Boxes, The File Controls.

UNIT-IV: Graphics with Visual Basic, Form Picture Box and Image Box Controls Sizing Images Loading and saving Images, Coordinates Systems, Scale Properties and Graphics Method, MDI-Parent & Child form, Menus in MDI application.

UNIT-V: Database Programming Using Visual Data Manager : Specifying Indices & Entering Data with Visual Data Manager. The ADO control & Dataware control – ADO object model, using ADO control, Establishing a connection & execution of SQL VB and Web – designing DHTML pages in VB – Inserting Text, Hyperlink, Graphics, Tables Using Web Browser Control.

TEXT BOOK:

1. Evangelos Petroustos, Mastering in Visual Basic, BPB Pub. 1st Edition-1993 (All units)

REFEREBCE BOOKS :

1. Reeta Sahoo, Beginners guide to VB6, Khanna Pub. 1st Edition -2000
2. A Mansoor , Visual Basic- Pragma Publication (Hindi Medium)

Note : There Shall be Ten Questions in the question paper, Two questions from each unit. The student will have to Attempt five question, Selecting one question from each unit.

2-BCA-3 DATA STRUCTURE & ALGORITUM

Time : 3 Hrs

Max. Marks-100
Min. Marks - 40

UNIT-I: INTRODUCTION TO DATA STRUCTURE :

The concept of Data structure, Abstract Data structure. Analysis of Algorithm, The concept of List.

STACKS AND QUEUES : Introduction to stacks & primitive operations on stack, Stack as an abstract Data type, Multiple stack, Stacks applications : Infix, Post Fix, prefix and recursion, Introduction to queues, primitive operation on the queues, Queue as abstract Data type, Circular queue, Dequeue, Priority queue.,

UNIT-II: LIMKED LIST:

Introduction to the linked list of stacks, The linked list of queue, Header nodes, Doubly linked list, Circular linked list, Stacks and queues as a circular linked list, Application of linked list.

UNIT-III: TREES : Basic terminology, Binary trees, Tree representations as array & linked list Binary tree

representations, Traversal of binary trees; in order, Preorder & Post order, Application of binary trees. Threaded binary tree. B-tree & Height balanced tree, Binary tree representation of trees, Counting binary trees.

UNIT-IV: SEARCHING SORTING: Searching, Binary Searching, Insertion sort Selection. Quick Sort, Bubble sort, Heap Sort, Comparison of sorting methods.

TABLES & GRAPHS: Hash table, Collision resolution techniques, Introduction to graph definition, Terminology, Directed undirected & weighted graph, Representation of graphs, Graph traversals: Depth first & Breadth. First search, Spanning trees, Minimum spanning tree Application of graphs.

BOOKS :

1. FUNDAMENTAL OF DATA STRUCTURE: By S. Shahney & E. Horowitch
2. DATA STRUCTURE: By Trembly & Sorrenson.
3. DATA STRUCTURE USING : PASCAL : By Trannenbaum & Augenstein.
4. DATA STRUCTURE : By Lipschuists
(Scheme's Outline Series McGraw Hill Publication)
5. Introduction to Data Structure by Shridhar B. Dandin – Pragya Publication (Hindi Medium)

NOTE: There shall be ten question in the questions paper, two questions from each unit. The student will have to attempt five questions selecting one question from each unit.

2-BCA-4 BUSINESS DATA PROCESSING

Time : 3 Hrs

Max. Marks-100

Min. Marks - 40

UNIT-I: (COBOL) INTRODUCTION TO COBOL

History of COBOL, Coding format for Cobol prg. Structure of Cobol program Character Set, Cobol words, Data Names & Identifiers, Literals, Figurative constants, Continuation of lines, Language description notation Implementation differences.

UNIT-II: IDENTIFICATION AND ENVIRONMENT DIVISION :

Identification division, Environment division, Configuration section, Input Output section, Level structure,

Data description entries, picture clause, Value, File section, Working storage section, Edition.

UNIT-III: PROCEDURE DIVISION & BASIC VERBS :

Structure of procedure division, Data movement verbs, Arithmetic verbs, sequence control verbs, I/O verbs conditional verbs, Usage clause. Redefine clause Rename clause, Qualification of Data Names, Sign clause, Elementary & Group moves corresponding option. Move corresponding add. & Sub. Corresponding, Rounded option on size error computer verb.

CONDITIONAL AND SEQUENCE CONTROL VERB

Relation condition, Sign condition, Class condition, Negated Simple condition, Compound condition, If Statement, Nested, If go to with depending phrase, After statement, perform statement.

UNIT-IV: TABLE HANDLING

Occurs clause and subscripting, Multi-Dim tables, perform-Verb and table handling, Indexed table and indexing set verb, Search verb, Occurs depending clause sorting a table, current trends in Data processing, Structured Prg. In Cobol, Weakness of Cobol as a language for structured programming.

UNIT-V: SEQUENTIAL FILES

File characteristics, File-control Entries for sequential files. File description Fixed length records & Different clauses open. Close write & Rewrite statement, Sequential files with variable length records: Fd entry, Record description, I-O control paragraph.

BOOK: 1. Cobol programming: By Roy & Dastidar

NOTE : There shall be ten question in the questions paper, two questions from each unit. The student will have to attempt five questions selecting one question from each unit.

2-BCA-5 NUMERICAL METHODS & ANALYSIS

Time : 3 Hrs

**Max. Marks-100
Min. Marks - 40**

UNIT-I: COMPUTER AIRTHMETIC: Binary number system. Octal & Hexadecimal system, Floating point Arithmetic, Transcendental and polynomial equations, Direct & Indirect methods, fixed point Iteration methods,

Regula falsi method.

UNIT-II: MATRICES HERMITIAN SKEW : Hermitian & Symmetric matrices Elementary Transformations, Elementary matrices, Determinant & Inverse of a matrix Rank and Nullity of matrices and solutions of Non-Homogeneous linear-equations, Characteristic roots, Cayley Hamilton theorem.

UNIT-III SYSTEM OF LINEAR ALGEBRIC EQUATIONS: Cramer Rule (Lu) Decomposition of Matrix, Gauss Elimination methods, Consistent and inconsistent, System of equations Jacobi iteration method, Gauss seidel iteration method index of convergence.

UNIT-IV: INTRODUCTION AND APPROXIMATION: Newton Interpolation formula and Newton Backward interpolation formula, Error in Newton interpolation formula, Lagrange interpolation formula Newton's divided difference interpolation formula.

UNIT-V: NUMERICAL DIFFERENTIATION AND INTEGRATION: Methods based on interpolation methods based on finite differences operators Newton colts. Method Trapezoidal rule and Simpson's rule.

BOOKS :

1. M.K.JAIN, S.R.K. IYENGAR and R.K.JAIN, NUMERICAL METHODS FOR SCIENTIFIC AND ENGINEERING COMPUTATIONS THIRD EDITION VILLY EASTERN Ltd. 1993.
2. NUMERICAL ALGORITHMS BY E.V. KRISHNAMURTHY and S.K.SEN EAST-WEST PARES Ltd. 1986.
3. DISCRETE MATHEMATICS – D.C. AGARWAL, H.K. PATHAK. 1986

NOTE : There shall be ten question in the questions paper, two questions from each unit. The student will have to attempt five questions selecting one question from each unit.

3 BCA-I : DATA BASE MANAGEMENT SYSTEM**Time : 3 Hrs****Max. Marks-100****Min. Marks - 40**

UNIT-1 : DATA BASE SYSTEM : Operational Data, Why Database, Data independence, an Architecture for a Database System, DDL & DML, Data Dictionary, Data Structures and Corresponding Operators, Data Models, The Relational Approach, The Network Approach, DBMS Storage Structure and Access Methods.

UNIT-II RELATIONAL DATA STRUCTURE : Relations Domains Attributes, Keys Extensions and Intentions, Base Tables, Indexes, System R Data Manipulation, Retrieval, Operations Built-In-Functions, Update Operations, The System R Dictionary.

UNIT-III QUERY LANGUAGE : Embedded SQL Introduction operation Not-Involving Cursors, Operations Involving Curesors, Dynamic Statements Security & Integrity, Security Specification. In SQL Introduction Retrieval Operations Retrieval Operations on Tree-Structured Relations Built-In-Function, Update Operations, The QBL Dictionary.

UNIT-IV RELATIONAL DATABASE DESIGN : Relational Algebra, Traditional Set Operations, Attribute Name for Derived Relations, Special Relational Operations, Relational Calculus, Type-Oriented Relational Calculus, Further Normalization. Functional Dependence, First, Second and Third Normal Forms, Relations with More than One Candidate Key, Good and Bad Decompositions, Fourth Normal form Fifth Normal Form.

UNIT-V : THE HIERARCHICAL APPROACH : The Architecture of An 'IMS System, Background, Architecture, IMS Data Structure, Physical Database, The Database Description, Hierarchical Sequence, IMS Data Manipulation, Defining the program communication Block (PCB). The LL/I Examples, Constructing the Segment search Argument, using more than one PCB.

THE NETWORK APPROACH: The architecture of a DBIG system, background, Architecture, DBIG data structure, The Set construct: Network examples, A sample scheme, Membership class, Set selection, A comparison of the Relational and Network Approaches Introduction, The conceptual Level, Some Criteria for the Conceptual Scheme. The Relational Approach.

BOOKS :

1. AN INTRODUCTION TO DATABASE SYSTEM (3rd ED.) By : C.J.DATE.
2. DATABASE SYSTEMN CONCEPTS (2nd ED.) By : C.J. DATE.
3. AN INTRODUCTION TO DATABASE SYSTEM By : BIPIN C. DESAI.

Note : There Shall be Ten Questions in the question paper, Two questions from each unit. The student will have to Attempt five question, Selecting one question from each unit.

3 BCA-2 : OOPS AND PROGRAMMING IN C++**Time : 3 Hrs****Max. Marks-100****Min. Marks - 40****UNIT-1 : PRINCIPLES OF OBJECT ORINETED PROGRAMMING :**

Software Crisis, Software Evaluation. A Look at procedure oriented Programming, Object-Oriented Programming Paradigm, Basis Concepts of Object-Oriented Programming, Benefits of OOP, A Simple C++ Program, C++ Statements, An example with class, Structure of C++ Program, Creating. The source File, Compiling and Linking.

UNIT-II: TOKENS EXPRESSIONS AND CONTROL STRUCTURES:

Introduction, Tokens, Keywords, Identifiers Basis Data Types, User Defined Data Types, Derived Data Types Symbolic Constants, Type Compatibility, Declaration of Variables, Dynamic Initialization of V Variable, Dynamic Initialization of Variables, Reference Variables, Operators Memory Management Operators, Manipulators, Type Cast Operator, Expressions and Implicit Conversions, Operator, Overloading, Control Structures.

FUNCTION IN C++ : The Main Function Prototyping, Call by Reference, Return by reference, Inling Functions, Default Arguments, const Arguments, Function Overloading, Friend and Virtual Functions.

UNIT-III: CLASSES AND OBJECTS :

'C' Structures Revisited, Specifying A class, Defining Member Functions, A C++ Program with class, making An Outside Function. Inline, Nesting of member Functions, Private member Functions, Arrays A class, Memory Allocation for Objects, Static Data Members, Static Member functions, Arrays of Objects As Function Arguments.

UNIT -IV: CONSTUCTIONS AND DESTRUCTORS :

Introduction, Constructors, Parameterized Constructors, Multiple Constructors in a class with default Arguments, Dynamic Initialization of Objects, Copy Constructor, Constructors, Constructing, Two-Dimensional Arrays, Destructors.

OPERATORS OVERLOADING AND TYPE CONVERSIONS :

Introduction Defining Operators Overloading Unary Operators, Overloading Binary Operators, Using Friends, Manipulation of Strings Using Operators, Rules for overloading operators, Type Conversions.

UNIT -V : INHERITANCE : EXTENDING CLASSES :

Introduction Defining Derived Classes, Single Inheritance, Making A Private Member Inheritable, Multiple Inheritance, Multilevel Inheritance, Heiraohioal Inheritance, Hybrid Inheritance.

POINTERS VIRTUAL FUNCTIONS AND POLYMORPHISM :

Introduction, Pointers Operations, to objects, This pointer, Pointers to derived classes, virtual functions, pure Virtual Functions, Managing Console I/O Operations, C++ Streams, C++ Stream Classes, Unformatted I/O Operations, Formatted console I/O Managing Output with manipulators.

BOOKS :

1. OBJECT-ORIENTED PROGRAMMING WITH C++ By E. BALAGURUSAMY
2. OBJECT-ORIENTED PROGRAMMING WITH C++ By NABAJYOTI BABKAKATI SAMS PHI. PVT.LTD.
3. Object Oriented Prog. With ANSI & Turbo C++ by Ashok N. Kamthane (Pearson Education)
4. Insight into OOP & C++ by Ekta Gupta (Pragya Publication, Hindi Medium)

Note : There Shall be Ten Questions in the question paper, Two questions from each unit. The student will have to Attempt five question, Selecting one question from each unit.

3 BCA-3 : APPLICATION PROGRAMMING IN FOXPRO

Time : 3 Hrs

Max. Marks-100

Min. Marks - 40

UNIT-1 : GETTING STARTED :

Loading Foxpro, Exploring the Foxpro Menu System, Creating A Database File, Entering Records in a Database File, Listing Contents of a Database file Using Options with list, Closing a Database file with Close DATABASE, Adding more Records with APPEND Searching for Specific Records with LIST Creating Database file with CREATE, Defining the Default Drive and Directory, Quitting, Foxpro, Other field Types.

VIEWING AND EDITING DATA :

Displaying Information with DISPLAY, Performing Calculations with LIST / DISPLAY, Searching for Information with field, Editing Data in a Record with Edit or Change Editing Multiple Record. With Browse, Moving between Records. Replacing Field Contents with Replace, Deleting, Unwanted Records with Delete, Recalling Deleting with Recall, Removing Records Permanently with Pack, Using the Foxpro Help System moving and Resizing Command Window.

MODIFY STRUCTURE MEMO FIELD AND FILE UTILITIES :

Modifying the Structure of a Database File, using the Memo Field to Store a Long Text, Entering Data in Memo Field, Listing Memo Field, File Utilities in Foxpro.

UNIT-II: SORTING AND INDEXING DATABASE FILES :

What is sorting ? Sorting information with SORT, Using options with SORT, Sorting on Multiple fields Sorting using sort dialog Box, Disadvantages of using SORT, What is Indexing ? Using the INDEX, Command, creating Index files with index dialog box. Creating Index files on multiple fields, Command Index file and Structural compound Index file, Creating Index in descending order, Creating Page, while defining. Structure to SORT or INDEX Database ? Finding information with SEEK, Rushmore technology.

UNIT-III: MEMORY VAREABLES DATA IS TIME FUNCTIONS AND KEYBORD MACHOS :

What is a Memory Variable? Creating and using memory variables, Creating array memory variables, Using array, saving and restoring memory variables, Displaying and manipulating information with Controlling Printer with? Time & date functions and commands, Data arithmetic, Converting defining function keys, Using and using Keyboard Macros, Creating and using Keyboard Macros

MATHEMATICAL COMMANDS AND FUNCTIONS :

Arithmetic operations, Mathematical functions, Mathematical commands, Other Foxpro functions.

PROGRAMMING WITH FOXPRO:

What is a program (Command) file? Creating a program file, running a program (Command) file, Creating program file with Modify Command, Using DO WHILE- ENDDO, Editing a program file, Using FoxPro in interactive Manner, Making decisions with IF-ENDIF, Using Scan-Endscan, Using for End for, Handling multiple options with DO CASE ENDCASE, Using TEXT ENDTEXT, Executing commands from other, command files, Macro Substitution.

UNIT -IV: ERROR CONDITIONS PROGRAM DEBUGGING AILS :

Error conditions in command mode, Error conditions while executing a program. Locating errors before running a program. Common error messages, Error debugging commands and techniques. Automatic documentation with Fox Doc.

MULTIPLE DATA FILES :

Concept of Multiple database files, Opening multiple database files, Linking Database with Set Relation, What is relation ? Updating information with UPDATE, Appending records from other files (APPEND FROM) Copying records to other files (COPY TO) Copying structure of a database file, Joining two database files with Join, Relational Query by Example and SO.

UNIT-V: PRINTING REPORTS AND LABELS:

Features of Foxpro report, Creating a Quick report, Saving the report format, Generating a report, Previewing a report,

Printing a report, Using the report, Dialog box to get report, Designing a custom report, Additional features of report. Using TOTAL to consolidate database file designing Mailing address labels displaying and printing labels.

ALIGNING CUSTOM SCREENS:

The @ commands, Displaying data with the @ command, inputting data with @ Get drawing and clearing box with @ command and @ Edit, Using options with @ Say-Get and read, Clearing screen with @ command, Drawing and Clearing box with @ command, Advanced features of @ Say command, Using PICTURE AND FUNCTION with @ GET, Designing a custom screen using @ command, Validating GET variables, What are UDF and procedure file ? Using a UDF with @ GET valid, Designing screen with screen builder R (CREATE SCREEN).

Using the generated screen file, Designing a custom screen with CREATE SCREEN, Additional features of screen builder, advanced feature of screen.

BOOK : 1. FOXPRO MALE SIMPLE : By R.K. TAXALI.

2. FoxPro by A Mansoor (Pragya Publication – Hindi Medium)

Note : There Shall be Ten Questions in the question paper, Two questions from each unit. The student will have to Attempt five questions, selecting one question from each unit.

3 BCA-4 : PRINCIPLES OF MANAGEMENT

Max. Marks-100

Min. Marks - 40

Unit-I-Introduction –Nature and Development of Management-Meaning, Definition and theories of management, Importance of Management, Management is a science or an art, Social responsibility of Management, Principles of management and function of management.

Organization- Definition, Structure and theories, types of organization, delegation of authority, centralization and decentralization.

Unit-II- Planning and forecasting–Introduction, definition, Objectives of planning, Nature purpose and importance of planning, Process of planning, types of plans, MBO (Management by objective).

Decision Making- Meaning and definition of decision Making, Process of Decision making, techniques of Decision Making.

Unit-III-Control and Direction- Meaning, definition, characteristics or nature, principles of control, Importance and principles of direction, Meaning and process of controlling, importance limitations budgets and budgetary control.

Motivation-Meaning definition, characteristics objectives, types of motivation, theory of motivation.

Leadership - Introduction-Meaning, Definition, characteristics, functions and theories of leadership.

Unit-IV-Human Resource management- Meaning Definition, Importance, function and scope.

Coordination - Meaning and definition, importance of coordination, techniques of coordination.

Communication-Meaning and definition, importance of communication in Management, types of communication.

Unit-V- Information presentation and reporting Principles and Types of report

MIS- Definition, structure of MIS, role of MIS in organization. Brief introduction to Project Planning and management and its tools/techniques-Gantt chart, PERT/CPM.

Entrepreneurship-Meaning and definition, Qualities for entrepreneur, EDP-meaning and definition, determinants of entrepreneurship, entrepreneurship development programs.

Text Books-

1. S. C. Saxena- Sahitya Bhavan Publication

2. Principles and practice of management by C.B.Gupta
3. Principles of Business Management and Entrepreneurship by P.K.Agrawal, A.K.Mishra
4. Principles of Management by Pragya Publication.

Reference Books-

1. Principles of Management- Peter F.Drucker.
2. Principles of Management-Sharleker and Sharleker.

SEMESTER – IV**4 BCA-1 : Programming with VB.NET****Max. Marks-100****Min. Marks - 40****Unit –I**

Introduction to .NET, .Net Features, CLR, MSIL, Assemblies and Class Libraries, Introduction to Visual Studio, Project Basics, Type of Projects in .Net, IDE of VB.Net, Menu Bar, Tool Bar, Solution Explorer, Toolbox, Properties Window, Form Designer, Output Window, Object Browser.

The Environment: Editor Tab, Format Tab, General Tab, Docking Tab, Visual Development & event Driven Programming- Methods and Events.

Unit – II

The VB.Net Language-Variables, Declaring Variables, Data type of Variables, Variables Declaration, Scope & Life Time of a variables, Constant, Arrays, Types of Arrays, Control Array, Collections, Subroutines, Functions, Passing variable number of Argument , Optional Argument, Returning value from functions.

Control Flow statements: Conditional statement, Loop statement, MSGBOX & Input Box.

Unit – III

Working with Forms: Loading, showing and hiding forms, Controlling One from within another.

GUI Programming with Windows Form: Text Box, Label, Button, List Box, Combo Box, Checkbox, Picture box, Radio Button, Panel, Scroll bar, Timer, List view, Tree view, Tool bar, Status Bar there properties, Methods and Events, Open File Dialog, Save FileDialog, FontDialog, Color Dialog, Print Dialog, Link Label.

Designing Menus: Context Menu, Access & Shortcut Keys.

Unit- IV

Object Oriented Programming, Classes and Objects, Fields Properties, Methods and Events, Constructor, Inheritance, Access Specified: Public, Private, Protected, Overloading, My Base & My Class Keywords.

Overview of OLE, Accessing the WIN32 API from VB.Net, CO Methodology, advantage of COM+, COM & .Net, Create User Control, Register user Control, Access com components in .net application.

Unit – V

Database programming with ADO.Net-Overview of ADO, from ADO to ADO.Net, Accessing Data using Server Explorer, Creating Connections, Command, Data Adapter and Data Set with OLEDB and SQLDB. Display Data on data bound, Display data on data grid.

Text & Reference Boojks:

1. VB.net Programming Black Box by Steven Holzner- Dreamtech Publication
2. Mastering VB.Netr by Evangelos Petroustos- BPB Publication.
3. Introduction to .Net Frame Work – Wrox Publication.
4. MSDN.MiroSoft.Com/Net
5. WWW.Gotdotnet.Com
6. VB.Net Programming , Pragma Publication (Hindi Medium)

4 BCA-2: COMPUTER FINANCIAL MANAGEMENT**Time: 3 Hrs****Max. Marks-100
Min. Marks - 40**

UNIT-1: General Accounting Concepts, Types of Accounts, Rule of Entries of transaction, Journal Format, Ledgering. Ledger format, Posting of entries, Balance of Accounts,

UNIT-II: CASH-BOOK : Use, Types of cash book, Format of cash books balancing of cash books, Subsidiary books purchase books, Sales books. Purchase return books , Sales return book.

UNIT-III: Trial Balance and adjustment. Final accounts, Trading A.C. : P/LA/C and balance sheet.

UNIT-IV : Pay roll department, Preparation of pay roll. Preparation of wage record, Inventory account and store record.

UNIT-V: Inventory or stock control and cost accounting, Department demand and supply method of stock control Classification and condition of material report on material handling. Discuss computer methods.

Practical Knowledge of computer accounting through Tally/ Ex/ Winca.

BOOKS :

1. COMPUTERISED FINANCIAL ACCOUNTING By SINGH & SINGH.
2. A TO Z COMPUTER ACCOUNTS By GOYAL.
3. COMPUTERISED ACCOUNTING By P.H. BAWSET.
4. Financial Accounting with Tally by Dr. Mukti Jain –Pragma Publication (Hindi Medium)

Note : There Shall be Ten Questions in the question paper, Two questions from each unit. The student will have to Attempt five question, Selecting one question from each unit.

4 BCA-3 : THEORY OF OPERATING SYSTEMS

Time : 3 Hrs

Max. Marks-100

Min. Marks - 40

UNIT-1 : OPERATING SYSTEM BASICS :

Definition, Simple Batch Systems, Multi Programmed Batched Systems, Time – Sharing Systems, Personal Computer Systems, Parallel Systems, Distributed Systems, Real-Time Systems, Systems Components, Operating Systems Services, Systems, Calls, Systems, Programs, Systems Structure, Virtual Machine, Systems, Design and Implementation, Systems Generation.

UNIT-II : PROCESS MANAGEMENT :

Process Concept, Process Scheduling, Operation on Processes, Operation Processes, Threads, Enterprises Communication, Basic Concepts, Scheduling Criteria, Scheduling Algorithms, Multiple-Processor Scheduling, Real-Time Scheduling, Algorithm Evaluation.

UNIT-III : PROCESS SYNCHRONIZATION :

Background, The Critical Section Problem, Synchronization Hardware, Semaphores, Classical Problem of Synchronization, Hardware, Semaphores, Classical Problem of Synchronization, Monitors, Synchronization in Solaris 2, Atomic Transactions, System Model, Deadlock Characterization, Methods for handling Deadlocks, Deadlock, Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock, Combined Approach to Deadlock.

UNIT-IV : STORAGE MANAGEMENT :

Background, Logical Versus Physical Address Space, Swapping, Contiguous Allocation Paging Segmentation, Segmentation with Paging Virtual Memory, Demand Paging Performance of Demand Paging Page Replacement, Page- Replacements Algorithms, Allocation of Frames, Inrushing, Other Considerations, Demand Segmentation.

UNIT-V : FILE SYSTEM INTERFACE :

File Concept, Access Methods, Director Structure, Protection, Consistency Semantics, File systems Structure, Allocation Methods, Free- Space Management, Directory Implementation, Efficiency and Performance, Recovery.

I/O SYSTEMS:

Overview, I/O Hardware, Application I/O Interface I/O Subsystem, Transforming I/O Requests to Hardware Operations, Performance, Disk Structure, Disk Scheduling, Swap-Space Management, Disk Reliability, Stable-Storage Implementation.

BOOK :

1. OPERATING SYSTEM CONCEPTS By SILBERCHATZ & GALVIN.
2. Operating System By Gaurav Sharma (Pragya Publication- Hindi Medium)

Note :

There Shall be Ten Questions in the question paper, Two questions from each unit. The student will have to Attempt five question, Selecting one question from each unit.

4 BCA-4 : SYSTEM ANALYSIS AND DESIGN MANAGEMENT INFORMATION SYSTEM (SAD/MIS)**Time : 3 Hrs****Max. Marks-100
Min. Marks - 40****UNIT-1 :**

The System Concept : Definition, Characteristics of a system : Organization, Interaction, Interdependence, Integration, Central Objective, Elements of a system and Types of Systems : Physical or Abstract System, Open or Closed Systems, Man-made Information Systems, The System Development Life Cycle, Considerations for candidate systems, Prototyping. The Role of System Analyst.

UNIT-II :

System Planning and Initial Investigation, Information gathering tools, System Analysis, The tools of System Analysis (DFD, Data Dictionary, Decision Tree and Structured English), System Performance definition, Description of outputs, Steps in feasibility analysis, Feasibility Report, Cost/Benefit Analysis : Data Analysis, Cost/Benefit Analysis, The system proposal.

UNIT-III :

System Design : Logical and Physical design methods, Design Methodology : Structured Design,

Form-Driven Methodology – HIOP and IPO Charts, Structured walkthrough, Processing controls and data validation, System Testing : Why System Testing, What do we test for, The Test Plan, Trends in Testing, Implementation and Software Maintenance: Conversion-Combating re resistance to change, post implementation review, software maintenance.

UNIT-IV : Management Information System : Introduction, what is MIS, characteristics of an MIS, the primary function, the MIS through the organization, a system of users and machine, Reporting capabilities- Principles of reporting'. Summarization of information, Report presentation mode, Types of Reports, Need for an MIS – Pitfalls in designing an MIS, Designing an effective MIS-Data Banks/Bases, determinants of value of information, Uses of Information- Users of Information within the organization, Users of information, Outside the Organization Function Reporting System, Characteristics of information flow.

UNIT-V : Managing the MIS Department-Placement of the MIS department, Organization of MIS department Centralization Vs Decentralization, Decision support system : Introduction, Level of Decision Making, Types of Decision – Unstructured Decision, Structured Decision Support System, Semi-structured Decision, What are Decision Support System, Types of Decision Support System, Impact of Decision Support System, Why do managers need Decision Support System, Examples of Decision Support System.

TEXT BOOKS:

1. Elias M. Awad, System Analysis and Design, Galgotia Publication- 2nd Edition (2001) (Unit – 1,2,3)
2. S. K. Basandra, Computers Today, Galgotia Publication- 1st Edition (1999) (Unit 4-5)
3. A. Mansoor , System analysis & Design, Pragma Publication (Hindi Medium)

REFERENCE BOOKS :

1. V.K. Kapoor, Introduction to Computer Data Processing & System Analysis, Pub. Sultan Chand & Sons, 1st Edition (1989)
2. G.B. DAVIS & M.H. Olson, Management Information System, Data McGraw- Hill 2nd Edition (2000)

Note : There Shall be Ten Questions in the question paper, Two questions from each unit. The student will have to Attempt five question, Selecting one question from each unit.

SEMESTER – V 5-BCA-1 – Network Technology

Time : 3 Hrs

**Max. Marks-100
Min. Marks - 40**

UNIT-I: Needs and Advantages – Network, Types-server based, peer, Hybrid Server Types Network Topology – Bus, Star, Ring, Star bus, Star ring, Mesh, Network Protocols Hardware protocol, Software protocols, Selecting and designing the network for an organization.

UNIT-II: Signal Transmission-Digital signaling, Analog. Signaling Bit synchronization, Baseboard and Broadband transmission, Network Media types – properties & specialties, comparative study, Network adapters

working principals configuration and selection.

UNIT-III: OSL, IEEE 802 AND TCP/IP model, Comparison between CSI & TCP/IP, Ethernet working principal, 10 & 100 MBPS Ethernet, Token Ring-working principal, cabling, Hubs, FDDI, Apple talk & ARC networking and their components, Network Scaling- No of computers, distance, software, speed Special Acquirements.

UNIT-IV: Networking Technologies – Fiber Channel, ATM, Network connectivity – Hubs, reprinters, Bridges, Multiplexers, Internet connectivity – Routers and Brouters, gateways, CSUs/DSUs.

UNIT-V: Various Sever & Clients Hardware & Software. Overview of Internet: Internet & TCP/IP, Internet addressing, Concepts of ISP, Concept of URL addresses, Hypertext Concepts & WWW,FTP,NNTP, Email, SMTP. Internet security: Internet security issues, Embedded & software based firewall, Data Encryption Digital Signatures.

TEXT BOOKS :

1. James Chilies Charles Perkins, Mathew Suede, Networking Essentials : Study Guide MCSF, Second Edition, BPB Publications(Unit-I,II,III,IV,V)
2. Padma J. Bonde, "Web Technology & Internet", Publication Nakoda Shiksha Sahitya Publication (Indore) First Edition – 2003(Unit-V)
3. A.S.Tanenbaum, "Computer Network". PHI-3rd Edition (2001) (Unit-III)

REFERENCE BOOKS :

1. S.K.Basandra & S.Jaiswal, "Local Area Networks", Galgotia Publications.
2. William Stallings, "Data and Computer Communication"

5-BCA-2 : Programming with ASP.Net

Time : 3 Hrs

**Max. Marks-100
Min. Marks - 40**

UNIT-I: - HTML – CONCEPT Of Hypertext, Versions of HTML, elements of HTML, Head & Body Sections, Building of HTML documents, Inserting text, Images, Hyperlinks, Background & Colour controls, Different HTML tags, Table layout and presentation, Use of front size and attributes. List types and its tags, Use of Frames and Forms in web

pages, ASP & html FORMS.

UNIT-II:- Overview of Dynamic web pages, Introduction & features of ASP.NET, Understanding ASP.NET Controls, Applications, Web Servers, Installation of IIS.

Web forms , Web form controls-server controls, client controls. Adding controls to a web form, Buttons, Text box, Labels, Check box, Radio Buttons, List box, Adding controls at run time, Running a web application, Creating a multiform web project.

Form Validation: Client side validation, server side validation,

Validation Control:-Required Field Comparison Range, Calendar Control, Ad rotator Control, Internet Explorer Control.

UNIT- III : - Overview of ADO.NET, from ADO to ADO.NET, ADO.NET Architecture, Accessing Data using Data Adapter and Datasets, using command and data reader, binding data to data bind controls, displaying data in data grid.

XML in .NET, XML basics, attributes, fundamental XML classes, Document, text writer, text reader, XML Validations, XML in ADO.NET, The XML Data Document.

UNIT-IV :- Web Services:- Introduction, State Management- View State, Session State, Application State.

SOAP, Web service description language, building and consuming a web service.

Web Application deployment Caching.

Threading concepts, Creating threads in .NET, managing threads, Thread Synchronization.

Security features of .NET, Role based security and Code access security, permissions.

UNIT-V : - Overview of C# and .NET, similarities and differences from JAVA, Structure of C# program.

Language features: Type system, boxing and unboxing, flow controls, classes, interfaces, Serializations and Persistence, Serializing an object, Desterilizing an object.

Delegates, Reflection.

TEXTBOOKS:-

1. The Complete Reference ASP.NET By Mathew Macdonald-TMH.
2. Professional ASP.NET – Wropx Publication.
3. VB.NET Programming Black Box by Steven Holzer- Dreamtech Publication.
4. Introduction to .NET framework – Wrox publication.
5. ASP.NET Unleashed.
6. C# programming- Wrox Publication
7. C# programming Black Box by Matt telles- Dreamtech Publication.
8. Learn HTML in a weekend by Steven E Callihan PHI.
9. using HTML by Lee Anne Phillips ,PHI.
10. Learn ASP.NET- Prayga Publications (Hindi Medium)

5-BCA-3 : JAVA PROGRAMMING**Max. Marks-100****Min. Marks - 40**

UNIT-I: JAVA EVOLUTION: Java History, Java features. How Java differs from C and C++ Java and internet, Java and World Wide Web. Hardware and software requirements, Java support systems Java environment.

OVERVIEW OF JAVA LANGUAGE : Introduction, Simple Java program, Memory Java in application with two classes, Java program structure, Java statements, Implementing a Java program, Java virtual machine, Command Line arguments, Programming style, Constants & Variables, Data types, Declaration of variables, Giving values to variables. Scope of variable, Symbolic constants, type casting getting values of variables, standard default values, Arithmetic operators, relational operators, Logical operators, Assignment operators, Increment and decrement operators, Conditional operators. Bitwise operators, Special operators, Arithmetic Expressions. Evaluation of expressions. Precedence of arithmetic operators. Type conversions in expiation. Operators Precedence and Associatively, mathematical functions.

UNIT-II : **DECISION AND BRANCHING :** Decision making with statement simple if statement. The Else statement. Nesting of if Else statement. The Else if ladder. The switch statement. The ? Operators. The while statement, the Do statement. The for statement Jumps in loops, labeled loops.

UNIT-III: **CLASSES OBJECTS AND METHODS :** Defining a class, adding variable and methods, creating objects, Accessing class members, Constructors, Methods overloading, Static members, Nesting of methods, inheritance extending a class, overriding methods, Final Classes, Finalizer methods, Abstract methods and classes, Visibility control.

ARRAYS STRAINS AND VECTORS : Array one dimensional arrays, Creating an array, Two dimensional arrays, strings, Vectors, wrapper classes, Defining interfaces. Extending interfaces. Implementing interfaces, Accessing interfaces variables, System packages, Using system package, Naming conventions, creating packages, Accessing package, Using a package, Adding a class to a package, Hiding classes.

UNIT-IV: **MULTITHREAD PROGRAMMING :**Creating threads, Extending the thread class, stopping and blocking a thread, life cycle of a thread. Using thread Methods. Thread exception, Thread priority, Synchronization, Implementing the runnable interface.

UNIT-V: **APPLET PROGRAMMING :** Local and remote applets, How applets differ form applications, preparing to write Applets, Building, applet code, applet life cycle, Creating an Executable applet, Lesigning a wet page, Applets tag.

Adding applets to HTML File, Running the applet, More about applets tags, passing parameters to applets, Aligning the display, More about HTML tags, Displaying Numerical values, Setting input from the User.

BOOKS :

1. Programming With Java A primer By : E. Balagruswamy.
2. Peter Nortons Guide To Java Programming By : Techmedia Publication.

NOTE : There shall be ten question in the questions paper, two questions from each unit. The student will have to attempt five questions selecting one question from each unit.

5-BCA-4 : R. D. B. M. S. (ORACLE AND DEVELOPER 2000)**Time : 3 Hrs****Max. Marks-100
Min. Marks - 40**

UNIT-I: ORACLE PHILOSOPHY : ORACLE DBA, SQL, Pluse Oracle Forms, Report writer, Oracle Graphics.
INTERACTIVE SQL : Invoking SQL Plus, Data Manipulation in DBMS. One Oracle Data Types. Operating a table Insertion of Data into tables. Updating the contents of a table. Delection operations. The many faces of the select command Modifying the structure of tables, Removing/Deleting/Dropping tables.

DATA CONSTRAINTS : Column level and table level constraints NULL value concepts primary key concepts. Unique key concepts, Default value concepts. The Foreign key references constraint, CHECK integrity constraints. Defining different constraints on the table Defining integrity constraints in the ALTER TABLE COMMAND.

UNIT-II : COMPUTATIONS IN EXPRESSION LISTS USED TO SELECT DATA

Logical operators, Range searching, Pattern matching. Oracle functions. Grouping data from tables in SQL. Manipulating data's in SQL

JOINS : Joining multiple tables (Equi joins) Joining a table to itself (Self Joins). Sub queries. Using the Union. Intersect and Minus clause. Indexes.

UNIT-III: VIEWS: Creating of views, Renaming the column of a view, Using views Selection a Data set from a view, Updateable views, Destroying a view, Granting permission, permission on objects created by the User. Granting permission using GRANT statement, object privileges, with grant option Referencing a Table belonging to another User. Granting permission to Users when the grantor has been giver. GRANT permission. Revoking the permissions given PL/SQL : Introduction : Performance, Performance improvement, portability, PL/SQL Data types, What PL/SQL can do for programming. The PL/SQL execution environment.

THE PL/SL SYNTAX : The character set. Understanding the PL/SQL block structure. Oracle Transactions, Locks, Cursor, Error Handling in PL/SQL.

UNIT-IV: STORED PROCEDURES : What are procedures, Where do procedures, How Oracle creates a procedure, How Oracle Executes procedures, Advantage of procedures, Syntax for creating stored procedure, An application using a procedure, Deleting a stored procedure.

STORED FUNCTIONS : What are functions, where do functions reside, How Oracle creates a function, How Oracle Executes a function, advantages of functions, Syntax for creating a stored function, an application using a function, Deleting a stored function.

DATABASE TRIGGERS : Introduction, use of Database Triggers, How to apply database triggers, types of Triggers, Syntax for creating trigger, deleting a trigger.

UNIT-V WORKING WITH FORMS

BASIC CONCEPTS : Application development in forms, Forms, Module.

USING THE FORMS DESIGNER : Creating a form, Generating and running a form.

MASTER FORM : Product master data entry screen, Triggers, The behavior of an oracle form in a Commercial Application.

MASTER / DETALL REPORT, CREATING A MASTER / DETALL REPORT.

BOOKS :

1. ORACLE DEVELOPER 2000- By Dvan Dayross, BPB Publications.
2. THE ORACLE BOOK : By Liebschuty, BPB Publications.
3. ORACLE BEGINERS GUIDE : By Michael Abbey & Michael J. Corey Data Micro Hill.

NOTE : There shall be ten question in the questions paper, two questions from each unit. The student will have to attempt five questions selecting one question from each unit.

-
-
-
-

SIXTH SEMESTER

	1
	6BCA
Major Project Dissertation	
Viva Voce	
Total	
	400 Marks
	100 Marks
	500 Marks

6BCA-1 Major Project & Viva Voce