BCA I YEAR

BCA-11-(FUNDAMENTALS OF COMPUTERS AND PC SOFTWARE)

MAX MARKS: 40 **MIN MARKS: 13**

Unit-I:

Introduction to Computers: History of development of Computers • Computer system concepts • Characteristics • Capabilities and limitations • Generations of Computers. • Von Neumann Architecture • Classification of Computers • Instruction Execution Cycle • Basic Components of a computer system – Control Unit, ALU, I/ O Devices, Memory – RAM, ROM, EPROM, PROM, Flash Memory and other types of memory. Types of Software – System software, Application software, Utility Software, Demoware, Shareware, Freeware, Firmware, Free Software. • Operating Systems – Functions, Types – Batch Processing, Single User, Multi User, Multiprogramming, Multi-Tasking. • Programming languages – Machine, Assembly, High Level, 4 GL. • Data representation in computers. Computer Viruses.

Disk Operating System (DOS) • Introduction, History & Versions of DOS. DOS basics • Physical structure of disk, drive name, FAT, file & directory structure and naming rules, booting process, DOS system files. Basic DOS Commands.

Unit-II:

Windows: features of windows — desktop, start menu, control panel, my computer, windows explorer, accessories. Managing multiple windows, arranging icons on the desktop, creating and managing folders, managing files and drives, logging off and shutting down windows. Entertainment – CD Player, DVD Player, Media Player, Sound Recorder, Volume Control.

WORD PROCESSING: Introduction to Word processing, Names of some commonly used word processing software.

Introduction to MS-Word: Feature, document creating, formatting, standard toolbar, drawing toolbar, tables and other features. Mail-merge, insertion of files, pictures, clipboard, graphs, print formatting, page numbering and printing documents. Spell Check, Thesaurus, Find & Replace, Inserting Header, Footer, page number & pictures. Working with Tables,

Introduction to MS - power point, Auto -wizard, creating a presentation using Auto content wizard, Blank presentation, creating, saving and printing a presentation, adding slide to a presentation, slide view, outline view, slide sorter view, notes view and slide show view. Changing text font and size, selecting text style and color, to set header and footer. Using, bullets, clipart and word art gallery. Applying design template creating graph. Adding transitions and Animation effects, setting timings for slide show preparing note pages, preparing audience handouts.

Unit-III:

Introduction To Spreadsheet (MS-Excel): Definition And Advantages of Electronic Worksheet, Working On Spreadsheets: Cell Referencing, Range & Related Operations, Setting, Saving And Retrieving Worksheet File, Inserting, Deleting, Copying And Moving of Data Cells, Inserting And Deleting Rows & Columns, Copying, inserting, Renaming the sheet of workbook. General Short-cut commands, Entering text and numeric data, Entering date and time different functions, formatting text and numeric data. Functions and Other Features: Classification and Usage of Various Built-In-Functions In Worksheet, Passwords, Protecting A Worksheet Printing of the worksheet, page margin setting and adding header and footer, Transferring Data to and From Non Worksheet Files, Database

Handling, Creating, Naming & Executing Macros. Creating graphs.

Unit-IV:

PC Maintenance and Troubleshooting: Opening the PC and identification. Study of different blocks, Basic Device Configuration and Installation-Printers, Microphone, Monitor, Mother Board, Sound Card, Video Card, tips on Trouble Shooting.

Introduction to Computer Hardware, Components of Mother-boards & its types, Ports, Slots, Connectors, add on cards, Power supply units, and cabinet types. Storage devices: Primary & Secondary storage medium.

Unit-V:

Overview of System Analysis and Design, Business System Concepts, System Development Life Cycle, Preliminary Investigation, Feasibility Study, System Analysis, System Testing, Implementation & Evaluation. Introduction to data Processing, fields, Records and Files. Types of files: Master files and Transaction file.

Practicals

Note: As per the syllabus and under guidance of respective faculty every student has to perform minimum 25 lab. Exercise covering all units with equal weightage.

TEXT BOOKS:

1. Computers Fundamentals and Architecture by B. Ram
2. Microsoft Windows XP Step by Step , PHI
3. William Stallings, Operating System, Pearson Education
4. Norton, Introduction to Computers, McGraw Hill
5. Ron Mansdield, Microsoft Office, BPB Publication
6. Fundamentals of Computers: P. K. Sinha
7. System Analysis and Design by Elias M Awad.

REFRENCES BOOKS:

1. P C Software for Windows by R K Taxali
2. P C Software Bible by S.Jaiswal
3. Computers Today: Suresh K.Basandra
4. Operating System: Achyut S. Godbole
5. Management Information systems by Gerald V. Post & David L. Anderson.
6. Understanding Computer Fundamentals & Dos By G.K. Iyer
7. MS-Office Interactive course by Greg Perry, Techmedia
8. MS Office Complete Reference TMH Publication.

BCA-12- (COMPUTER SYSTEM ARCHITECTURE)

MAX. MARKS: 40 **MIN. MARKS: 13**

Unit-I

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

Unit-II

DIGITAL LOGIC CTRCUITS: Logic gates, AND, OR, NOT, GATE& their truth tables, NOR NAND & XOR gates. **BOOLEAN ALGEBRA:** Demorgan's theorem.**MAP STMPLOCATION:** Minimization techniques, K-Map. Sum of product & product of sums. **COMBINATIONAL & SEQUENTIAL CIRCUITS:** Half adder, full adder, full subtractor, Flip-Flops-RS, & T Flip-Flops, Shift registers, counters

Unit-III

CPU ORGANTSATIONS- ALU & CONTROL CIRCUIT: Idea about arithmetic circuit program control, Instruction sequencing. **INTRODUCTION TO MICROPROCESSOR:** Microprocessor Architecture (8086), 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-IV

INPUT-OUTPUT ORGANIATION: I/O interface, properties of Simple I/O Devices and their controller, Isolated versus memory-mapped I/O, Modes of Data Transfer, Synchronous & Asynchronous Data Transfer, Handshaking, Asynchronous serial transfer, I/O processor.

Unit-V

MEMORY ORGANISATION : Auxiliary memory, Magnetic drum, Disk & Tape Semi conductor memories, Memory Hierarchy, Associative memory, Virtual memory, Address space & memory space, Address Mapping, Page table, Page replacement, Cache memory, Hit Ratio, Mapping techniques,

Writing into cache.

TEXT BOOK:
Computer System Architecture by: M. MORRIS MANO

BCA-13-(PROGRAMMING AND PROBLEM SOLVING THROUGH 'C')

MAX MARKS: 40 **MIN MARKS: 13**

Unit-I

Classification of programming language: Machine, Assembly and High level languages Structured programming concepts, modular programming, top-down programming approach. **Problem-Solving Techniques**: Steps for Problem-Solving, Design of Algorithms, Definition, Features of Algorithm. Flowcharts, Basic Symbols used in Flowchart Design. **Basics of C:** History of C, salient Features of C, Structure of a C Program, a Simple C Program, Compiling a C Program, Link and Run the C Program.

Unit-II

Variables and Constants: Character Set, Identifiers and Keywords, Rules for Forming Identifiers, Data Types, Variables, Declaring Variables, Initializing Variables, Constants, Types of Constants, operators, expressions, operator precedence and associatively.

Conditional Statements and Loops: Decision Control Statements: if Statement, switch Statement, Loop Control Statements: while Loop, do-while Statement, for Loop, Nested Loop, goto-Statement, Break Statement, Continue Statement. Storage Classes, Managing input/output function: formatted and unformatted

Unit-III

Functions: Definition of a Function, types of function, Declaration of a Function, Function Prototypes, passing arguments to a function, call by value, call by reference, command line argument, recursion. **Pointers:** pointers and their characteristics, address and indirection operators, pointer Type declaration and assignment, pointer arithmetic, introduction to pointer to pointer.

Unit-IV

Array: one dimensional array Declaration, Initialization, insertion, deletion of an element form an array, finding the largest/smallest element in an array, two dimensional arrays, addition/multiplication of matrices. **String:** Declaration and Initialization of Strings, Array of Strings, Built-in String Functions strlen, strcpy, strcmp, strcat, strlwr, strrev Function, Other

String Functions. **Structures and Unions:** Declaration of Structures, Accessing the Members of a Structure, Initializing Structures, Structures and Unions.

Unit-V

File Handling: Concept of files, Open a file using the function fopen(), Close a file using the function fclose( ), file opening mode. Input and Output using file pointers, Character Input and Output in Files, String Input / Output Functions, Formatted Input / Output Functions, Block Input / Output Functions, Sequential Vs Random Access Files, text file vs binary file. **Graphics programming**: introduction, functions.

Practicals

Note: As per the syllabus and under guidance of respective faculty every student has to perform minimum 50 laboratory exercise covering all units with equal weightage.

TEXT BOOKS:

1. E. Balagurusamy , " Programming in ANSI C"
2. How to solve it by computer by R.G.Dromy, PHI
3. Let us C by YashwantKanetkar
4. Programming in C by S.S.Bhatia

REFERENCES BOOKS:

1. Programming in C:Denis Ritchie
2. "C The Complete Reference", H. Schildt, Tata McGraw Hill
3. Programming and problem solving through 'C'(Elsevier)

LIST OF PRACTICALS

1. Write a program to print digits of entered number in reverse order.
2. Write a program to print sum of two matrices.
3. Write a program to print multiplication of two matrices.
4. Write a program to demonstrate concept of structure.
5. Write a program for finding the root of a Quadratic Equation.
6. Write a program for Marksheet.
7. Write a program to generate even/odd series from 1 to 100.
8. Write a program to find area of a circle, rectangle, and square using case.
9. Write a program to check whether a given number is even or odd.
10. Write a program whether a given number is prime or not.
11. Write a program for call by value and call by reference.
12. Write a recursive program to calculate factorial of a given number.
13. Write a program to generate a series
    1+1/1!+2/2!+3/3!+----------+n/n!
14. Write a program to create a pyramid structure
    *
    **
    ***
    ****
15. Write a program to create a pyramid structure
    1
    12

123
1234

16. Write a program to reverse a string.
17. Write a program to find whether a given string is PALINDROME or not.
18. Write a program to input 10 numbers add it and find its average.
19. Write a Program to print table of any number.
20. Write a Program to print Fibonacci series
21. Write a Program to find length of string without using function.
22. Write a Program to perform all arithmetic operations using case statement.
23. Write a Program to check entered number is Armstrong or not.
24. Write a program to enter record of student and print it using structure
25. Write a Program to find biggest/smallest among N numbers using 1-dimensional array.
26. Write a Program to insert an element in 1-dimensional array.
27. Write a Program to delete an element in 1-dimensional array.
28. Write a Program to create a data file.
29. Write a Program to read the data file.
30. Write a Program to insert more data(append) into the data file.

BCA-14-(INTERNET & WEB TECHNOLOGY)

MAX MARKS: 40 **MIN MARKS: 13**

UNIT – I

Introduction to Internet

Internet, Growth of Internet, Owners of the Internet, Anatomy of Internet, ARPANET and Internet history of the World Wide Web, basic Internet Terminology, Net etiquette, Internet Applications – Commerce on the Internet, Governance on the Internet, Impact of Internet on Society – Crime on/through the Internet.

Internet Technology and Protocol

Packet switching technology, Internet Protocol TCP/IP, Router, Internet Addressing Scheme: Machine Addressing (IP address), Understanding the layers of TCP/IP.

UNIT – II

Internet Connectivity

Hardware requirement, selection of a modem, software requirement, modem configuration, Telephone line options, Protocol options, Service options, Telephone line options – Dialup connections through the telephone system, dedicated connections through the telephone system, ISDN, Protocol options – Shell, SLIP, PPP, Service options – E-mail, WWW, News etc.

Internet Network

Network definition, Common terminologies: LAN, WAN, Node, Host, Workstation, bandwidth, Interoperability, Network administrator, network security, **Network Component**s: Severs, Clients,

Communication Media, **Types of network:** Peer to Peer, Clients Server, Addressing in Internet: DNS, Domain Name and their organization, understanding the Internet Protocol Address. **Network topologies**: Bust, star and ring, Ethernet, FDDI, ATM and Intranet.

UNIT – III

Electronic Mail

Email Networks and Servers, Email protocols –SMTP, POP3, IMAp4, MIME6, Structure of an Email – Email Address, Email Header, Body and Attachments, Email Clients: Outlook Express, Web based E-mail.

Current Trends on Internet

Internet Phone, Internet Video, collaborative computing, definition of e-commerce.

UNIT IV

HTML Programming Basics

HTML page structure, HTML Attributes, HEAD elements, Html links.

HTML - Concepts Of Hypertext, Elements of HTML, Syntax, Head & Body Sections, Building HTML Documents. Inserting Texts, Images, Hyperlinks, Backgrounds And Color Controls, Different HTML Tags,

Table Layout and Presentation, Use of Font Size & Attributes, List Types and Its Tags, Use of Frames inWeb Pages.

UNIT – V

Interactivity Tools: Introduction

ASP,VB script, XML, JAVA, JAVA SCRIPT, use of AJAX in web applications.(Introduction only)

Web Publishing & Browsing:

Overview, SGML, Web hosting, HTML, CGL, Documents interchange standards, Components of Web Publishing, Web page design consideration and principles, Search and Meta search engines, www browser ,HTTP ,Publishing tools, HTTP request object.

PRACTICALS:

Note: As per the syllabus and under guidance of respective faculty every student has to perform minimum 25 labs. Exercise covering all units with equal weightage.

TEXT BOOKS:

1. Greenlaw R and Hepp E "Fundamentals of Internet and www" 2nd EL, Tata McGrawHill,2007.
2. Ivan Bayross, "HTML, DHTML, JavaScript, Perl CGI", 3rd Edition, BPB Publications.
3. D. Comer, "The Internet Book", Pearson Education, 2009.

REFERENCE BOOKS:

1. M. L. Young,"The Complete reference to Internet", Tata McGraw Hill, 2007.
2. Godbole AS &Kahate A, "Web Technologies", Tata McGrawHill,2008.
3. Jackson, "Web Technologies", Pearson Education, 2008.
4. B. Patel &Lal B. Barik, " Internet & Web Technology ", Acme Learning Publishers
5. Leon and Leon, "Internet for Everyone", Vikas Publishing House.

LIST OF PRACTICALS:

1. Write a Program to print hello world in HTML.
2. Write a program to show different headings in HTML.

3. Write a program to show text in paragraph.
4. Write a program to show tags in paragraph like bold, italic, centre.
5. Write a program to show HTML attributes.
6. Write a program to show various formatting tags in HTML.
7. Write a program to show the use of superscript and subscript.
8. Write a program to show the use of div tag.
9. Write a program to show the use of phrase tags.
10. Write a program to show the quoting text.
11. Write a program to show the use of Meta tags.
12. Write a program to show the use of comment tag.
13. Write a program to show the use of images.
14. Write a program to set the image border, list etc.
15. Write a program to show the use of table tag.
16. Write a program to show cell padding and cell spacing.
17. Write a program to show the use of list tag.
18 Write a program to show the use of frames.
19. Write a program to create a simple webpage with pictures and text.
20. Write a program to show the linking of web pages.

BCA-15-(CYBER SECURITY)

MAX MARKS: 40 **MIN MARKS: 13**

UNIT – I

Network & Communication:

Basics of Communication Systems, Transmission Media , ISO/OSI and TCP/IP Protocol Stacks, HTTP, SHTTP Local Area Networks, Wide Area Networks, Internetworking, Packet Formats, Wireless Networks , The Internet.

UNIT – II

Cyber Crime & Law:
Cyber, Cyberspace, Types of Cyber Crime, Hacking, Cracking, Spyware, malware, Viruses & Worms, Trojan and backdoors, SQL Injection. Attack on wireless Network, Cyber Law, and Indian IT ACT 2000.

UNIT – III
Security & Cryptography:
Security principles, threats and attack techniques, Introduction to security, Information, security, Security Issues and its types, Focus of control, Security threats and attacks, Security management, Protecting passwords, Access control structures, Types of access control.
Cryptography, Plain Text, Encryption and Decryption.

UNIT IV
Network security: Introduction to Network security Protocol design principles, ISO architecture, IP security, SSL/TLS, Firewalls, How a firewall protects Network, Intrusion detection.

UNIT – V
Windows security: Windows security, Subjects, objects and access control software security and database security, Memory management, Data and code. Virtual Private Network in Windows, how to connect devices and computer, Virtual Private Network Security.

REMARK: Workshop on **"Cyber Security Issues"** must be organized by the Department.

TEXT BOOKS:

*Computer Security, 2nd.- ed. , Author: Dieter Gollmann , Publisher: John Wiley & Sons, 2006.
*Security in Computing, Fourth Edition, Author: Charles P. Pfleeger, Shari Lawrence ,
Publisher: Pearson India
*Cryptography and Network Security, Principles and Practices 3rd. ed. Author: William
Stallings, Pearson Education
*Cyber Law & IT ACT 2000, Author: Vivek Sood, McGraw Hill.

BCA-16-(DISCRETE MATHEMATICS AND ALGEBRA)

MAX MARKS: 40 **MIN MARKS: 13**

UNIT – I Set Theory:

Definition of Sets, complements Relation: Definition, types of relation, composition of relations, domain and range of a relation, pictorial representation of relation, properties of relation, partial ordering relation.

Function: Definition and types of function, composition of functions, recursively defined functions.

UNIT – II Algebra of logic:

Proposition logic, basic logic, logical connectives, truth tables, tautologies, contradiction, normal forms (conjunctive and disjunctive), Notion of proof: proof by implication, converse, inverse, contrapositive, negation, and contradiction, direct proof, proof by using truth table, proof by counter example.

UNIT – III Algebraic Structure:

Binary composition and its properties definition of algebraic structure; Groyas Semi group, Monoid Groups, Abelian Group, properties of groups, Permutation Groups, Sub Group

UNIT IV Graphs:

Graph terminology, types of graph connected graphs, components of graph, Euler graph, Hamiltonian path and circuits, Graph coloring Tree: Definition, types of tree(rooted, binary), properties of trees.

UNIT – V Determinant and Matrices:

Determinants properties, solution of simultaneous equations by Cramer's rule. Definition of special kinds of matrices, Review of matrices, inverse of matrix. Normal forms, Linear dependence, Rank, Application to theory of solutions of system of linear equations, linear transformation,

TEXT/REFERENCE BOOKS:

1. Kenneth H. Rosen, "Discrete Mathematics and its Applications", Mc.Graw Hill, 2002.
2. J.P. Tremblay& R. Manohar, "Discrete Mathematical Structure with Applications to Computer Science", Mc.Graw Hill, 1975.
3. V. Krishnamurthy, "Combinatories: Theory and Applications", East-West Press.
4. Seymour Lipschutz, M.Lipson, "Discrete Mathematics" Tata McGraw Hill, 2005.
5. Kolman, Busby Ross, "Discrete Matheamatical Structures", Prentice Hall International.
6. A text book of Discrete Mathematics by H K Pathak and D C Agrawal, Shikshasahitya Prakashan,
Meerut.

BCA II YEAR

BCA-21-DATA STRUCTURES USING C++

Max Marks: 40 **Min Marks: 13**

Unit-I

Introduction, OOPS languages, characteristics of OOP's languages, application of OOP's, OOP's paradigm, concepts: object, class, data abstraction, data encapsulation, inheritance, and polymorphism. Static and dynamic binding, message passing, benefits of OOP's, disadvantage of OOP's.

Unit-II

C++ Programming Concepts: input and output in C++, functions in C++- value parameters, reference parameters, Parameter passing, function overloading, arrays, pointers, new and delete operators, class and object, access specifiers, friend functions, constructors and destructor, Operator overloading, Inheritance and Polymorphism. Exceptions-throwing an exception and handling an exception.

Unit-III

Basic Concepts – Data Structures, Algorithm Specification-Introduction, Recursive algorithms, Data Abstraction, Performance analysis- time complexity and space complexity, Asymptotic Notation-Big O, Omega and Theta notations, Complexity Analysis Examples, Introduction to Linear and Non Linear data.

Stack: Definition, Array implementation of stack (static stack): Operations PUSH, POP, And TRAVERSE. Applications of stack: Infix, Prefix, Postfix representation and evaluation using stack, Use of stack in recursive implementation.

Queue: Definition, Array implementation of queue (static queue): Operations INSERT, DELETE and TRAVERSE. Introduction to Circular queue: Definition & implementation, Priority queue, Double ended queue, Applications of queue.

Unit-IV

Introduction to linked list: Definition, advantaged, basic operations on linked list, stacks and queues using linked list, doubly linked list, circular linked list, applications of linked list.

Searching and Sorting Techniques: Sequential search, binary search, insertion sort, selection sort, quick sort, bubble sort, heap sort, comparison of sorting methods.

Unit-V

Tree: Trees-basic terminology ,binary trees, tree representations as array and linked list, basic operations on binary tree, traversal of binary trees:- inorder, preorder, postorder. Applications of binary tree, threaded binary tree, AVL tree, Introduction to B-Tree & B+ tree. Hash Table, Collision resolution technique.

Graphs: Definition, Terminology, Directed, Undirected and Weighted Graph, Representation of Graph, Graph Traversal-Depth first, Breadth first search, Spanning tree, Minimum Spanning tree, Shortest path algorithm.

Practicals:

Note: As per the syllabus and under guidance of respective faculty every student has to perform minimum 50 lab exercise covering all units with equal weightage.

Text Books:

1. Object Oriented Programming with C++, Balaguruswamy Tata Mgraw Hill (2008).
2. Object Oriented Programming in C++, Robert Lafore, Sams; 4 edition.
3. YedidyahLangsam Moshe J. Augenstein, Aaron M. Tenenbaum, "**Data Structures using C & C++",** PHI
4. G.S.Baluja, "**Data Structures Through C++**",DhanpatRai& Co.,4th Edition
5. Fundamentals of Data Structures BySartajSahani.

Reference Books:

1. Seymour Lipschutz,"**Data Structures**", Schaum's Outline Series, Tata McGrawHill.
2. Adam Drodzek, "**Data Structures & Algorithm in C++**", 2nd Edition

LIST OF PRACTICALS

1. Write a program to find average of 3 numbers.
2. Write a program to find biggest among 3 numbers.
3. Write a menu driven program (Switch case) to perform arithmetic operations.
4. Write a program to check whether entered number is Prime or not.
5. Write a program to check whether entered number is even or odd.
6. Write a program for addition of two matrixes.
7. Write a program for multiplication of two matrixes.
8. Write a program to find transpose of a matrix.
9. Write a program to print :

   *

   * *

   * * *
10. Write a program to print :

    * * *

    * *

    *
11. Write a program to print :

    1

    2 2

    3 3 3
12. Write a program to print :

    1

    2 3

    4 5 6

13. Write a program to check whether entered string is palindrome or not.
14. Write a program to print Fibonacci series.
15. Write a program to find factorial of a given number.
16. Write a program to demonstrate use of static data member.
17. Write a program to demonstrate use of a static member function.
18. Write a program to create array of objects.
19. Write a program to demonstrate use of friend function.
20. Write a program to illustrate use of copy constructor.
21. Write a program to demonstrate constructor overloading.
22. Write a program to illustrate use of destructor.
23. Write a program to overload a unary operator.
24. Write a program to overload a binary operator.
25. Write a program to demonstrate single Inheritance.
26. Write a program to demonstrate multiple Inheritance.
27. Write a program to demonstrate multilevel Inheritance.
28. Write a program to demonstrate hierarchical inheritance.
29. Write a program to demonstrate hybrid Inheritance.
30. Write a program to demonstrate the use of function overloading.

BCA II YEAR

BCA-22-(DATABASE MANAGEMENT SYSTEM & RDBMS)

Max. Marks: 40 **Min. Marks: 13**

UNIT-I

Purpose of database system, views of data, data models: relation, network, hierarchical, instances and schemas, data dictionary, types of database languages:-DDL, DML, DCL, TCL, structure of DBMS, advantages and disadvantages of DBMS, 3-level architecture proposal:- external, conceptual & internal levels. Database System architecture, level of abstraction, Database users and DBA, Classification of Database Management Systems, Components of database system, Traditional File Systems vs. Modern Database Systems, Data Independence.

UNIT-II

Entity relationship model as a tool of conceptual design: entities & entities set, relationship, relationship set & relationship types, attributes, role, participation and mapping constraints, keys, strong and weak entities, Advance ER Model Features: generalization, specialization & aggregation.

UNIT-III

Fundamentals of set theoretical notations: relations, domains, attributes, tuples, concept of keys: primary key, super key, alternate key, candidate key, foreign key, fundamentals of integrity rules: entity & referential integrity ,extension and intention, relational algebra: select, project, Cartesian product, different types of joins: theta, equi, natural, outer joins, set operations.

Evaluation of SQL, Between clause, Distinct Clause, Order by Clause, Group by Clause, SQL Functions, Sub queries, Handling null value, Aggregate function, User Defied Function, , View. Relational Calculus, Introduction, Tuple Relational Calculus, Domain Relational Calculus.

PL/SQL Programming using Oracle, Oracle Data types, Looping and Decision Making, Working with Stored Procedure, Trigger, Cursor, Index.

UNIT-IV

Codd's Rule, Functional Dependencies, Good & Bad Decomposition and Anomalies as a database: Normalization: INF, 2NF, 3NF &BCNF normal forms, multivalued dependency, join dependency, 4NF, 5NF.

UNIT-V

Basic concepts: -Indexing and Hashing, Emerging Database Technology: Data Warehouse, Data Mining, Distributed database, Mobile Database, Object Oriented Database.

Practicals

Note: As per the syllabus and under guidance of respective faculty every student has to perform minimum 25 lab. exercise covering all units with equal weightage.

Text Books-

1. Database System Concepts by Henry Korth and A. Silberschatz.
2. Simplified approach to DBMS, Prateek Bhatia, Gurvinder Singh Kalyani Publication
3. Database Management System by SeemaKedar, Technical Publication

Reference Books-

1. An Introduction to Database System by BipinDesa
2. An Introduction to Database System by C.J.Date.
3. AtulKahate, “Introduction to Database Management Systems”,
4. Raghu Ramakrishnan, “Database Management Systems”,
5. G.K.Gupta, “Database Management Systems”, Tata McGraw Hill, 2011.

List Of Practicals

Waq To Insert Some New Records In Emp Table.

Waq To List The Number Of Employees Whose Name Is Not ‘Ford’, ‘Jams’ Or ‘Jones,

Waq To List The Name And Salary And Sort Them In Descending Order Of Their Salary

Write Pl/Sql Code To Add Two No.

Waq To List The Details Of Employees Whose Name Is Starts From ‘A’

Waq To Delete All Records From Emp Table

Waq To Insert Values In 3 Fields.

Write Pl/Sql Code To Print Table Of Entered No.

Waq To List The Student Name Having ‘D’ As Second Character.

Waq To List The Name And Salary And Sort Them In Descending Order Of Their Salary

Write Pl/Sql Code To Calulate Total Salary Of Emp No 100

Write Pl/Sql Code To Find Greatest Among Two No.

Waq To List The Name And Salary And Sort Them In Descending Order Of Their Salary

Write Pl/Sql Code To Find Greatest Among 3 No.

Waq In Employee Table Find All The Manager Who Earns Between 1000 And 2000.
Display Record Of Employee Who Have Salary Between 1000 And 2000.
List The Name Salary And Department Number Of The Employee And Order Them By Their Salary In Descending Order.

Write A Code In Pl/Sql To Print Nos From 1 To 10

In Employee Table Change The City Of Employee From Existing One To New One.
Add A Column Salary Of Datatype 'Number' & Having Size '5' With Default Value 1000.
Waq To Find The Employee Who Earns The Lowest Salary In Each Department.Display In Ascending Order Of Salary.

Write A Code In Pl/Sql To Add ,Sustract, Multiply And Divide 2 No According To Choice.

List The Employee Who Earns Maximum Salary In Their Department.Find The Name Of All Employee Who Works For 'First Bank Corporation'.Display The Record Of Employee Whose Name Start With 'S' & Age Is Greater Than 18.

Find The Name,Street & City Of Residence Of All Employee Who Works For 'Fbc'
Waq To Find The Employee Who Earns The Lowest Salary In Each Department.Display In Ascending Order Of Salary.
Waq To Update The Salary Of Employee Number 1902 To Rs 10,000

Write A Pl./Sql Code To Add 3 Nos

Waq To Find The Name,Street And City Of All Employee Who Works For 'Fbc' And Who Earn More Than 1000.

Waq To Increase The Salary By 2000 And Rename The Column As "Newsalary"

Waq To Find The Name,Street And City Of All Employee Who Works For 'Fbc' And Who Earn More Than 1000.

Write Pl/Sql Code To Substract 2 Nos.

Waq To Find Total Of Salaries Of All Employees From Emp Table

Waq To Decrease The Salary Of Emp From 5000 And Rename Column As 'Newsalary'

List The Employee Number Of Employee Who Belone To Department 10,20.

List The Employye No Of Employees Who Earn Greater Than 2000
Insert New Field Called Category In Emp Table.
Display Different Jobs In Departments 20,30

List The Names Of Employees Having Two 'Aa' In The Name
Print The Name , Emp No, Sal Of Employees In Emp Table.
List The Names Of Employees Who Do The Job Of Clerks Or Salesman.

List The Jobs Common To Department No 10 & 20.

Waq To Find Total Of Salaries Of All Employees From Emp Table

Waq To Update The Salary Of Employee Number 1902 To Rs 10,000

Write A Pl/Sql Block To Check Whether Entered Year Is A Leap Year Or Not.
Create A User Defined Procedure To Find Number Of Vowels In A Given Word.

Write A Pl/Sql Block To Find Factorial Of Any Given Number.

Write A Pl/Sql Block To Create A Trigger For Update Or Insert On Ename Field Of Emp Table. The Trigger Will Make The Entries Of Ename Field In Uppercase.

Write The Steps To Create A Form.

Create A Procedure That Accepts Two Numbers And Return Addition, Subtraction , Multiplication & Division Of Two Numbers. (Local Procedure)
Write The Steps To Create A Report.

Write A Pl/Sql Block For Creating A Cursor In Which The Salary Of Employees Of Deptno--20 Is Increased By 0.05 . When Such Raise Is Given ,The Record For The Same Should Be Maintained In Emp_Raise Table With Fields Empno, Date & Actualraise.

Write A Pl/Sql Block To Print Fibnoccai Series
0 1 1 2 3 5 8….

Write A Pl/Sql Block That First Insert A Record In An Emp Table . Increase The Salaries Of Blake &Clark By Rs. 2000 & Rs.1500. Then Check To See That Total Salary Doesnot Exceed Rs.20,000. If The Total Salary Is Greater Than 20,000 Then Undo The Updates Made To The Salaries Of Blake &Clark .

Emp Table:-

Empno	Emp_Name	Salary
E001	Harry	5000
E002	Blake	1000
E003	Jack	5000
E004	Clark	1000

Write The Steps To Create A Form.

Write A Pl/Sql Block To Find Hcf Of Two Positive Numbers

Write A Pl/Sql Block To Calculate Sum Of Digits
583 = 5+8+3= 16

Create The Table Client_Master

Fieldname	Datatype	Size

Client_No	Varchar2	6
Name	Varchar2	20
Address	Varchar2	30
City	Varchar2	10
Phone	Number	10

1) Enter 5 Records
2) Find Out The Names Of All The Clients.
3) Retrieve The Entire Content Of Client_Master Table.
4) List All The Clients Who Are Located In Bombay.
5) Change The City Of Client_No "C005' To Bombay.
6) Add A Column "Salary'" Of Datatype 'Number' And Size 5 To Client_Master Table.

BCA – II YEAR

BCA-23-(SOFTWARE ENGINEERING)

MAX. MARKS: 40 **MIN. PASS MARKS: 13**

Unit-I

Introduction :

Defining software, software engineering, software process-generic process model, prescriptive process model-waterfall, prototyping, incremental, spiral, RAD,Agile process. Software engineering Knowledge-core Principles.

Unit-II

Requirements : Software requirement, need for SRS, requirement process, problem analysis, analysis issues. Requirement specification, characteristics of an SRS, component of an SRS, structure of requirement document

Unit-III

Design Modeling With Uml:

Data Modeling Concepts and Diagrams - Use Case Diagrams - Class Diagrams - Interaction Diagrams - State chart Diagrams .Design Process- Design concepts: Abstraction, Architecture, patterns, Separation of Concerns, Modularity, Information Hiding, Functional Independence, Refinement, Aspects, Refactoring. Implementation of mentioned models (diagrams).

Unit-IV

Software Implementation :

Software coding guidelines and Techniques-(top down, bottom up, structured programming, oops),Modern Programming Language Features: Type checking-User defined data types-Data Abstraction-Exception Handling- Concurrency Mechanism.

Unit-V

Software Testing:

Testing strategy and steps(unit, integration, validation, system testing).Testing fundamentals ,white box testing, Control structure testing, black box testing. Case Tools, Software RE-engineering, Reverse Engineering.

TEXT BOOKS :

1. Roger S, "Software Engineering – A Practitioner's Approach", seventh edition, Pressman, 2010.

2. Pearson Edu, "Software Engineering by Ian sommerville", 9 th edition, 2010.
3. Jalote Pankaj, An Integrated Approach to Software Engineering

REFERENCES :

1. Hans Van Vliet, "Software Engineering: Principles and Practices"–, 2008.Richard Fairley, "Software Engineering Concepts", 2008.

BCA II YEAR
BCA-24-(OPERATING SYSTEM with LINUX)

Max Marks: 40 **Min Marks: 13**

Unit-I

Introduction to Operating Systems, Operating system services, multiprogramming, time sharing system, distributed systems and parallel processing ,storage structures, system calls, multiprocessor system. Basic concepts of CPU scheduling, Scheduling criteria, Scheduling algorithms, multiple processor scheduling, real time scheduling I/0 devices organization, I/0 devices organization, I/0 devices organization, I/0 buffering.

Unit-II

Process concept, process scheduling, operations on processes, threads, inter-process communication, precedence graphs, critical section problem, semaphores, classical problems of synchronization. Deadlock problem, deadlock characterization, deadlock prevention, deadlock avoidance, deadlock detection, recovery from deadlock, Methods for deadlock handling

Unit-III

Concepts of memory management, logical and physical address space, swapping, contiguous and non-contiguous allocation, paging, segmentation, paging combined with segmentation.
Concepts of virtual memory, demand paging, page replacement algorithms, allocation of frames, thrashing, demand segmentation. Security threads protection intruders-Viruses-trusted system.

Unit-IV

Unix operating system, background, philosophy, help facility, The file system, structure of file system, Basic Command related to file system.

Utilities: more, file, wc, file comparison (cmp, comm, diff) , lp, banner, cal, date, who, tty, sty commands. The Bourne shell: sh preceding a command by its own combining commands, pattern matching, echo, pipes, tees, shell variables and shell scripts, simple filters, Advanced filters.

The process: shell process, parent and children process status, system processes, multiple jobs , foreground and background, wait commands, pre mature termination of process, job execution with low priority, multiple jobs in foreground, shell layers, timing processes.

Unit-V

Communication and scheduling, Execute at later running jobs, periodically. Programming with shell: system variable, profile, conditional execution, script termination, Conditional and loop control statements, set and shift statement.

System Administration: super user, security, user services, floppy disk, management operation, files system, administration backups.

Practicals

Note: As per the syllabus and under guidance of respective faculty every student has to perform minimum 25 lab. exercise covering all units with equal weightage.

TEXT BOOK

1. Operating System Concepts, Addison Wesley, 4th Edition, A. Silberschatz and P. Galvin. 1994.
2. Sumitabha Das, "Unix : Concepts and Applications", Third Edition, 2006,Tata Mc-Graw Hill
3. Modern Operating System, A.S Tanenbaum., Prentice Hall of India
4. Operating System by Deitel

REFERENCE BOOK:

1. Maurice J. Bach, "Design of the Unix Operating System", Third Edition,2000,PHI.
2. ISRD Group, Basics of OS, UNIX and SHELL Programming" TMH (2006)
3. A User guide to unix system", Thomas Rebecca yate, Second Edition,2002,.Tata McGraw Hill.
4. Stephen Prata "Advanced Unix -A programmer's Guide".

BCA – II YEAR

BCA-25-(ACCOUNTING AND FINANCIAL MANAGEMENT)

MAX. MARKS: 40 **MIN. MARKS: 13**

Unit-I

Introduction: Financial Accounting-definition and Scope, objectives of Financial Accounting, Accounting v/s Book Keeping Terms used in accounting, users of accounting information and limitations of Financial Accounting.

Unit-II

Conceptual Frame work: Accounting Concepts, Principles and Conventions, Accounting Standards concept, objectives, benefits, brief review of Accounting Standards in India, Accounting Policies, Accounting as a measurement discipline, valuation Principles, accounting estimates.

Unit-III

Recording of transactions: Voucher system; Accounting Process, Journals, Subsidiary Books, Ledger, Cash Book, Bank Reconciliation Statement, Trial Balance. Depreciation: Meaning, need & importance of depreciation, methods of charging depreciation.(WDV & SLM).

Unit-IV

Preparation of final accounts: Preparation of Trading and Profit & Loss Account and Balance Sheet of sole proprietary business.

Introduction to Company Final Accounts: Important provisions of Companies Act, 1956 in respect of preparation of Final Accounts. Understanding of final accounts of a Company.

Unit-V

Computerised Accounting: Computers and Financial application, Accounting Software packages. An overview of computerized accounting system - Salient features and significance, Concept of grouping of accounts, Codification of accounts, Maintaining the hierarchy of ledger, Generating Accounting Reports.

Reference Books:

1. Fundamentals of Accounting & Financial Analysis: By Anil Chowdhry (Pearson Education)
2. Financial accounting: By Jane Reimers (Pearson Education)
3. Accounting Made Easy: By Rajesh Agarwal& R Srinivasan (Tata McGraw –Hill)
4. Financial Accounting for Management: By Amrish Gupta (Pearson Education)
5. Financial Accounting for Management: By Dr. S. N. Maheshwari (Vikas Publishing House)

BCA II YEAR

BCA-26(COMPUTER ORIENTED NUMERICAL METHODS)

Max Marks: 40 **Min Marks:13**

Unit-I

NUMERICAL COMPUTATIONS :Number system,Computer Arithmetic: Floating Point Number Operations, Normalization and their consequences. Iterative Methods : Bisection Methods, False Position Methods, Newton Raphson Method.

Unit-II

Matrices:Rank & nullity of a matrix,Eigen Values and Eigen Vectors, Caley Hamilton theorem,Convergence of Solution Simultaneous Liner Equation : Solution of Simultaneous Liner Equation – Gauss Elimination Method, Gauss – Seidal Method, Gauss – Jordan Elimination Method, Triangularization Method, ILL Conditioned Equation

Unit-III

Difference Operators And Interpolation: Definition Of Forward, Backward, Shifting, Divided, Difference Central and Averaging Operators and their Relationships. Newton's

Forward Interpolation Formula, Newton's backward Interpolation Formula ,Newton's divided Interpolation Formula. Lagrange's Interpolation Formula.

Unit-IV

Newton Forward Divided Difference Interpolation,Newton Backward Divided Difference Interpolation,General Quadrature Formula, Newton- Cote's Formula, Trapezoidal Rule, Simpson's one Third Rule, Simpson's Three Eight Rule.

Unit-V

Numerical Solutions of Ordinary Differential Equations : Euler's Method , Euler's Modifies Method. Taylor's Series Method, Picard's Method, Runge Kutta Second Order and Fourth order Method.

TEXT BOOK:

1. V. Rajaraman, Computer Oriented Numerical Methods, Prentice Hall, India.

REFERENCE BOOKS:

1. S. S. Sastry, Introductory Methods of Numerical Analysis. M. K. Jain, S.R.K. Iyengar & R. K. Jain, Numerical Methods for Scientific and Engineering Computation.
2. H. C. Saxena, Finite Differences and Numerical Analysis.
3. Modes A., Numerical Analysis for Computer Science.
4. Numerical Analysis by gupta and malik . (TEXT)
5. Numerical Analysis by Shastri
6. Computer based Numerical Algorithm by Krishnamurthy.

PRACTICAL LIST FOR NUMERICAL ANALYSIS

1. Write a program in C to find the root of the equation using Bisection Method.
2. Write a program in C to find the root of the equation using Newton Raphson's Method.
3. Write a program in C for Lagranges Interpolation.
4. Write a program in C for Trapezoidal Rule
5. Write a program in C for Simpson's 1/3 Rule.
6. Write a program in C for Muller's Method.
7. Write a program in C For Predictor And Corrector 's Method.
8. Write a program in C for Trapezoidal Rule .
9. Write a program in C for Simpson's 3/8 Formula .
10. Write a program in C For Euler Method.

11. Write a program in C For Newton's Forward Difffrence Interpolation Formula .

BCA-31-(OBJECT ORIENTED PROGRAMMING USING JAVA)

Max Marks: 40 **Min Marks:13**

UNIT I

Primitive data types – integer, Short, Long, byte, float, double, Unicode, Character set, Boolean, their ranges, defaults initial values, wrapping of integer arithmetic, casting comments, identifiers and reserved words, local variables, operators and operator precedence, examples and exercises.

UNIT II

Statements simple and compound, Uses of control do, for, while, switch, break, case

continue, label, class type data: String, Arrays, example and exercises.

UNIT III

Definitions and naming conventions for the members of the JAVA classes, instance fields and methods, Initialization by constructor, Initialization by Default constructor, Multiple Definition of constructors, creation of objects, access methods. Examples and exercises.

UNIT IV

Inheritance, Super class, Sub class, Method overloading, interface, thread, Multithreading example, synchronized, Exception (try-catch-final blocks examples.) examples and exercises.

UNIT V

Java Virtual machine concept, Java Platform overview, programming Examples to clarify use of object, threads, exceptions and packages for I/O, file and string handling. examples and exercises.

Practical

Note: As per the syllabus and under guidance of respective faculty every student has to perform minimum 50 lab. exercise covering all units with equal weightage.

TEXT BOOK

1. Complete Reference (Java 2) – Herbert Schildt - Tata McGraw Hill
2. Programming with java E. Balagurusamy Tata McGraw Hill, New Dehli, 2nd edition 2002.

REFERENCE BOOKS :

1. Joseph O'Neil, Teach yourself java, Tata McGraw Hill, New Dehli, 2001.
2. Java script : Don Gosselin, Thomson Learning (vikas Publication)
3. Java in a nut shell – Flanagan – Orielly Publication

LIST Of PROGRAMS

- WAP in java to calculate of diagonal elements.
- WAP in java to print unit matrix.
- WAP in java to demonstrate creation of threads.
- WAP in java to demonstrate interface.

- WAP in java to demonstrate multiple interface defining interface.
- WAP in java to demonstrate packages.
- WAP in java to demonstrate applets.
- WAP in java to perform multiplication of two matrix.
- Write a menu driven program using switch in java.
- WAP in java to demonstrate multi threading.
- WAP in java to calculate sum of upper triangular elements of matrix.
- WAP in java to calculate sum of lower triangular elements of matrix.
- WAP in java to print digits of number in reverse order.
- WAP in java to check entered number is Armstrong or not.
- WAP in java to perform addition of matrix.
- WAP in java to perform subtraction of matrix.
- WAP in java to print table of any number in proper format.
- WAP in java to print following format.

```
*
*
*     *     *
*     *     *     *
*     *     *
*
*
```

- WAP in java of swing using Action Listener.
- WAP in java to demonstrate labels and text field.
- WAP in java to demonstrate checkbox

BCA-32-(COMPUTER NETWORKS)

Max Marks: 40 Min. Marks:13

Unit I

Introduction: Computer Network, Goals and Applications, Models – OSI and TCP/IP, Types of networks: LAN, MAN and WAN, Topologies, LAN components – File server, Workstations, Network Adapter Cards. Networking medium: twisted pair, coaxial cable, optical fibre, Digital data rates, Serial Data Formats, Encoded data Formats, Connection Oriented and Connectionless services, Switching Techniques – Circuit Switching, Packet Switching, Message Switching.

Unit II

Data Link Layer**:** Design Issues, Framing, Error detection: Parity Check, LRC, VRC, Check Sum and Cyclic Redundancy Check (CRC); Correction Technique: Hamming code. Flow Control: Elementary Data Link Protocols: An Unrestricted Simplex Protocol, Simplex Stop-and-Wait Protocol, Sliding Window Protocols: One-Bit Sliding Window Protocol, Go Back N and Selective Repeat. Data link layer in the Internet: SLIP and PPP.

Unit III

Limits of Communication, RS 449 Interface Standards, RS 422 and RS 423. Multiplexing methods : FDM, TDM, WDM, sampling theorem and quantization, Delta Modulation.MAC Sub layer**:** Multiple access protocols: Pure Aloha, Slotted Aloha, CSMA Protocols; Collision- Free Protocols; IEEE MAC Sub layer protocols: 802.3, 802.4, 802.5:Ethernet, Fast Ethernet, Token Bus, Token Ring, FDDI, Wireless LANs.

Unit IV

Network Layer: Design issues, Routing Algorithms: Optimality Principle, Shortest Path Routing, Flooding, Distance Vector Routing. Link State Routing, Hierarchical Routing, Broadcasting Routing, Multicast Routing. The Network Layer in the Internet: Internet Protocol, IP addresses and Internet Control protocols.

Unit V

Transport Layer: Elements of Transport Protocols, Addressing, Connection Establishment & Release, Flow Control & Buffering, Multiplexing. Introduction to UDP & TCP.

Application layer**:** DNS, WWW and HTTP, Cookies, Proxy Server. E-mail Protocols (SMTP, POP3, IMAP, MIME), FTP, TELNET. Network Security: Cryptography, Symmetric- key Algorithms: DES, AES, Public-key Algorithms: RSA, Digital Signatures.

BOOKS:

Text Books:

1. Data & Network Communication by Michael A. Miller
2. Data Communications and Networking, B.A. Forouzan, Tata McGraw-Hill.

Reference Books:

1. Deitel&Deitel, Goldberg," Internet and World Wide Web-How to Program", Pearson Education Asia,2001
2. Computer Networks-A. S. Tanenbaum.

BCA-33-(WEB PROGRAMMING)

MAX. MARKS: 40 **MIN. PASS MARKS: 13**

Unit-I

Web Technology: Introduction to WWW, web browsers, web servers, HTTP, URL.

HTML: Introduction, Objective, HTML Command Tags: Text, List, Table, creation of links, inserting graphics, forms.

Cascading style sheets: Introduction to CSS, creating style sheets, Types of CSS.

Unit-II

A Brief History of PHP, PHP Characteristics, Installing and Configuring PHP on Windows, PHP Language Basics - Data Types, Variables, Expressions and Operators, Decision Statements, Flow Control Statements, Embedding PHP in Web Pages. **Strings:** String Constants, Printing Strings, Accessing Individual Characters, String Handling Functions: length, Word count, string position, reverse, replace.

Unit-III

Arrays: Indexed Arrays, Associative Arrays, Identifying Elements of an Array, Storing Data in Arrays, Multidimensional Arrays, extracting multiple values, , Traversing Arrays.

Functions: Calling a Function, Defining a Function, Variable Scope, Function Parameters, Return Values, Variable Functions, And Anonymous Functions.

Object Oriented Programming Concepts: Classes, Objects, Member Functions, Encapsulations, Inheritance, and Polymorphism.(only basic definitions of these topics)

Unit-IV

Form Handling in PHP:

Setting Up Web Pages to Communicate with PHP, Handling Text Fields, Text Areas, Check Boxes, Radio Buttons, List Boxes, Password Controls, Hidden Controls, Image Maps.

File Handling: Working with files and directories, File Open and Read, File Create and Write, Reading and writing Character in file, reading entire file, Rename and Delete File, getting information of files, ownership and permissions.

Unit-V

Database Access: Using PHP to access a database. Introduction to MySql, connectivity with MySql.

XML: What is XML? XML document structure, PHP and XML, XML parser, the document object model, the simple XML extension, changing a value with simple XML.

Practicals

Note: As per the syllabus and under guidance of respective faculty every student has to perform minimum 50 lab. exercise covering all units with equal weightage.

BOOKS:

1. Programming PHP by RasmusLerdorf and Kevin Tatroe, O'Reilly Publications
2. Beginning PHP5 by Wrox Publication
3. Mastering PHP : BPB Publication

4. PHP 5.1 for beginners by Evan Bayross and Sharman Shah, SPD Publications
5. PHP 5.2 The Complete Reference by Steven Holzner, McGraw Hill Edition 2008.

Web Designing

1. Create a time table of your class.
2. Create a mark list of University examination.
3. Create a website for an automobile Company (add images and sounds)AN FMCG Company.
4. Create a dynamic website for an educational institution.
5. Create a website of computer products (add proper animation).
6. Create an online application form for admission process.
7. Create a website for online marketing.
8. Create a web page with information on the following topics: e Your Name

- Address
- Date of Birth
- Hobbies
- Favorite pastime
- Ideals
- Favorite Music
- Favorite Films

9. Create an HTML document with the paragraph using <P> <H1> <STRONG> for the first word of every sentence.
10. Create an HTML document to describe Unordered and Ordered list and their features.
11. Create a Web page for the following:

WELCOME TO ABC UNIVERSITY STUDENTS DETAILS

S.No.	NAME	BRANCH	SEM	Marks		
				M1	M2	M3

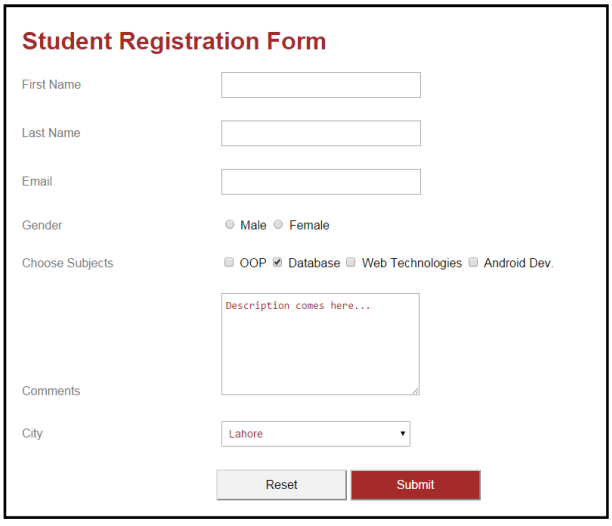
12. Create an HTML document to include an image. Use the width and height attributes of the <img> tag to

    - Increase the image width size by 100%.
    - Increate the image Height size by 50%.
    - Image Name using Alt Attribute.

13. Create a Link using <A> tag for each of the following:

    - Create Link for – RDVV, MP Higher Education, UGC
    - Remove Link – Text Decoration.
    - Link opens in New Tab.

14. Design a web form for each of the following:



15. Create a home page of your own using HTML tags.
16. Write an HTML document to provide a form that collects names and telephone numbers.

BCA-34-(MANAGEMENT INFORMATION SYSTEM)

Max Marks: 40 **Min Marks:13**

UNIT-I:

Management & Organizational Support Systems For Digital Firm:

Definition of MIS; Systems approach to MIS: Report writing s/w, MIS and Human factor, Considerations, concept of organizational information sub-system, MIS & problem solving. Case Studies.

UNIT-II:

Information Systems & Business Strategy:

Information Management. Who are the users? Manager & Systems, Evolution of Computer based information system (CBIS), Model of CBIS. Information services organization : Trend to End-User computing, justifying the CBIS, Achieving the CBIS, Managing the CBIS, Benefits & Challenges of CBIS implementation. Strategic Information System, Business level & Firm level Strategy, Case Studies.

UNIT-III:

Information Systems In the Enterprise:

Systems from Management & Functional perspective & their relationship: Executive Information System, Decision Support System Sales & Marketing Information System, Manufacturing Information System, Human-Resource Information System. Finance & Account Information System. Case Studies.

UNIT-IV:

Information Technology for Competitive Advantage :

Firm in its environment, What are the information resources? Who manages the information resources? Strategic planning for information resources. End-User Computing as a strategic issue, Information resource management concept. Case Studies.

UNIT-V:

E-Commerce & International Information System :

Introduction to E-Commerce, Business Intelligence. E-Commerce strategy, Electronic Data Interchange, E-commerce methodology, E-commerce technology, Business application of the Internet. Electronic Business success strategies. Managing International Information Systems: IIS architecture, Global business drivers , challenges, strategy: divide, conquer, appease, cooptation, business organization, problems in Implementing global information systems, Computer crime, ethics & social issues.

Text Books:-

1. MIS A Concise Study, S.A. Kelkar, PHI.
2. MIS managing the digital firm, Kenneth C. Laudon& Jane P. Laudon (Pearson Education).
3. ElectronicCommerce: Greenstein, Merylin, Tata Mc.Graw Hill

Reference Books :-

1. MIS, Suresh K. Basandra (Wheelers)

2. Introduction to computer Information System for Business, Mark G. Simkin, S. Chand & Co., 1996.
3. Analysis & Design of Information Systems, James A. Senn. MCGraw-Hill International.

BCA-35- (COMPUTER GRAPHICS WITH MULTIMEDIA)

Max. Marks: 40 **Min. Marks: 13**

UNIT – I

A brief background about applications of Computer Graphics. Overview of graphic systems, video display devices, refresh cathode ray tubes, raster and random screen display, color CRT monitors, flat panel displays, LCD's. Design and architecture of raster scan and random scan display systems. A brief introduction to input devices and hardcopy devices. Output primitives, DDA and Bresenham's 2D line drawing algorithms, parallel line algorithms.

UNIT – II

Midpoint circle generating algorithm, Ellipse generating algorithm, Character generation, attributes of output primitive, line and curve attributes, character attributes, Basic Transformation, Composite Transformation

UNIT – III

Clipping operations, Cohen Sutherland line clipping, Liang Barsky line clipping, Nicholl-Lee-Nicholl line clipping, polygon clipping, Sutherland Hodgeman and Weiler-Atherton polygon clipping, text and curve clipping.

UNIT IV

Photoshop-Introduction: Working with image file- creating a new file, opening an existing file, importing an image, grabbing scanner image, grabbing a digital camera image, adding file information, saving a file, saving to another format, switch between file, closing a file. **Adding contents with tools:** selecting a tool, setting a tools option in option bar, resetting defaults, choosing colors, working with painting and drawing tools. **Working with image view:** using the zoom tool, changing the view zone.

UNIT – V

Selecting image content: Using the marquee tool, using the lasso tool, selecting pictures with magic wand ,selecting by color range, adjusting and removing selection. **Changing a selection:** Deleting, Moving, Copying, Transforming, Modifying, Saving, and loading a selection, undoing a change. **Using positioning tools:** showing and hiding a grid, showing and hiding rulers, using snap and snap to locking guides. **Using layers, masks and paths:** Working with layer, deleting a layer, setting layer properties, choosing a layer style, arranging layer order ,grouping and ungrouping layers, flatter the image.

Text Book:

Computer Graphics by Donald Hearn and M. Pauline Baker, Second Edition, PHI 1997.Photoshop 6 for Windows by Lisa A. Buckly, Pub.BPB.

Reference Books:

Learn yourself Photoshop by Vishnu Priya Singh and M. Singh Asia Pub.

WEBSITE LINKS:

http://cs.fit.edu/~wds/classes/grap
hics/History
http://people.csail.mit.edu/fredo/Depiction/1_Introduction/review
Graphics.pdf http://www.evl.uic.edu/datsoupi/502/14_mach.pdf
http://www.dgp.toronto.edu/~hertzman/418notes.pdf

BCA-36-(CLOUD COMPUTING CONCEPTS)

Max Marks: 40 **Min Marks:13**

UNIT-I:

Introduction: Historical development, Vision of Cloud Computing. Characteristics of Cloud Computing as per NIST, Cloud Computing reference model, Cloud computing environments, cloud services requirements, cloud and dynamic infrastructure, cloud Adoption and rudiments. Overview of cloud applications: EGC Analysis in the cloud Protein structure predication, Gene Expression Data Analysis, Satellite Image Processing, CRM /and ERP, Social Networking.

UNIT-II:

Cloud Computing Architecture: Cloud Reference Model, Types of Clouds, Cloud Interoperability & Standards, Scalability and fault tolerance, Cloud Solutions: Cloud Ecosystem, Cloud Business Process Management, Cloud Service Management, Cloud Offerings: Cloud Analytics, Testing Under Control, Virtual Desktop Infrastructure.

UNIT-III:

Cloud Management & Virtualization Technology: Resiliency, Provisioning, Asset management, Concepts of Map reduce, Cloud Governance, High Availability and Disaster Recovery. Virtualization: Fundamental Concepts of Compute, storage, networking, desktop and Application Virtualization, Virtualization benefits, server Virtualization, Block and file level storage virtualization Hypervisor Management software, Infrastructure Requirements, Virtual LAN (VLAN) and Virtual SAN (VSAN) and their Benefits.

UNIT-IV:

Cloud Security: Cloud Information Security Fundamentals, Cloud Security Services, Design Principles, Secure Cloud Software Requirements, Policy Implementation, Cloud Computing. Security Challenges, Virtualization security Management, Cloud Computing Security Architecture.

UNIT-V:

Market Based Management of Clouds, Federated Clouds/Inter Cloud: Characterization & Definition, Cloud Federation Stack, Third party Cloud Services. Case Study: Google App Engine,

Microsoft Azure, Hadoop, Amazon, Aneka

List of Experiments:

1. Installation and configuration of Hadoop / Euceliptus etc.
2. Service deployment & usage over cloud.
3. Management of cloud resources.
4. Using existing cloud characteristics & services models.
5. Cloud Security Management
6. Performance evaluation of services over cloud. Grading System 2013-14

Recommended Text:

1.Buyya, Selvi, "Mastering cloud Computing" TMH Pub
2.KumarSaurabh, "could Computing", Wiley Pub
3.Krutz, Vines, "cloud Security", Wiley Pub
4.velte, "Cloud Computing-A Practical Approach", TMH Pub
5.Socinesky, "Cloud Computing", Wiley Pub

BCA-P38 Project Based on BCA31 & BCA33

M.M 50

NOTE:-

- Students has to work on live project
- Name of Firm /Organization/Industry concerned with the project.

Format for project Synopsis

A. Title page:

1. Name of Student
2. Roll No
3. Enrollment No
4. Name of Guide
5. Name of college and department
6. Branch
7. Batch

B. Introduction

The introduction part will include the brief introduction about the project to be developed, technology used, field of project (if specialized one), any special technical terms about the project.

C. Objective(s) & Scope

This should give a clear picture of the project. Objective should be clearly specified. What the project ends up to and in. what way this is going to help the end user has been mentioned**.**

D.SDLC

E. Feasibility Study
This will describe the very first step of software engineering i.e. feasibility study of the project that includes the feasibility, need and significance of the project.

F. Resources
The requirement of the resources for designing and developing the proposed system must be given. The resources might be in form of the Tools / Platform, hardware / software or the data from the industry.

G. Database Tables
All these must be captioned, serially numbered and referred to in the text

H. Process Description including DFDs and ER diagram

The process of the whole software system proposed, to be developed, should be mentioned in brief. This may be supported by DFD's / Flowcharts to explain the flow of the information and ER diagram.

I. Future scope and further enhancement

J. Conclusion
The write-up must end with the concluding remarks-briefly describing innovations in the approach for implementing the Project, main achievements and also any other important feature that makes the system stands out from the rest.

k. References
List them according to the given format. All these must have been referred to in the text of the synopsis.

Format for Final Project Report

A. Title page:
1. Name of Student
2. Roll No
3. Enrollment No
4. Name of Guide
5. Name of college and department
6. Branch
7. Batch

B. Candidate declaration

C. Acknowledgement

D. Certificates

E. Introduction

The introduction part will include the brief introduction about the project to be developed, technology used, field of project (if specialized one), any special technical terms about the project.

F. Objective(s) & Scope

This should give a clear picture of the project. Objective should be clearly specified. What the project ends up to and in. what way this is going to help the end user has been mentioned**.**

G. Feasibility Study

This will describe the very first step of software engineering i.e. feasibility study of the project that includes the feasibility, need and significance of the project.

H. Resources

The requirement of the resources for designing and developing the proposed system must be given. The resources might be in form of the Tools / Platform, hardware / software or the data from the industry.

I. Database Tables

All these must be captioned, serially numbered and referred to in the text

J. Process Description including DFDs and ER diagram

The process of the whole software system proposed, to be developed, should be mentioned in brief. This may be supported by DFD's / Flowcharts to explain the flow of the information and ER diagram.

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L. Conclusion

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M. References

List them according to the given format. All these must have been referred to in the text of the synopsis.