

Mata Gujri Mahila Mahavidyalaya, Autonomous
Jabalpur

SYLLABUS PRESCRIBED FOR THE

B.C.A. I, II Year
B.C.A. V, VI semester

(Academic Session 2018-19 onwards)

Published by:

Department of P.G. Studies in Computer Science & Application

Mata Gujri Mahila Mahavidyalaya, Autonomous
Jabalpur

w.e.f. July 2018 Onwards

BCA – I/ First Year (Annual System)

Group	Paper Code	Subject	Internal			Theory	Total	Practical	Grand Total
			3 Months	6 Months	Total				
Group-I	BCA-11	Fundamentals of Computers and PC-Software	5	5	10	40	50	--	100
	BCA-12	Computer System Architecture	5	5	10	40	50	--	
Group-II	BCA-13	Programming & Problem Solving through C	5	5	10	40	50	--	100
	BCA-14	Internet & Web Technology	5	5	10	40	50	--	
Group-III	BCA-15	Cyber Security	5	5	10	40	50	--	100
	BCA-16	Discrete Mathematics & Algebra	5	5	10	40	50	--	
Group-IV	BCA-17	Foundation Course---- Same as B.Sc./B. Com./B. A.----					100	--	100
Group-V	BCA-P18	Practical based on BCA11, BCA13 & BCA14	--	--	--	--	--	50	50
TOTAL							400	50	450

NOTE: General BCA Examinations rules are same as B. Sc. (Computer Sc.)/(IT).

w.e.f. July 2018 Onwards

BCA – II/ Second Year (Annual System)

Group	Paper Code	Subject	Internal			Theory	Total	Practical	Grand Total
			3 Months	6 Months	Total				
Group-I	BCA-21	Data Structure using C++	5	5	10	40	50	--	100
	BCA-22	Data Base Management System & RDBMS	5	5	10	40	50	--	
Group-II	BCA-23	Software Engineering	5	5	10	40	50	--	100
	BCA-24	Operating System with LINUX	5	5	10	40	50	--	
Group-III	BCA-25	Accounting & Financial Management	5	5	10	40	50	--	100
	BCA-26	Computer oriented Numerical Methods	5	5	10	40	50	--	
Group-IV	BCA-27	Foundation Course ---- Same as B.Sc./B. Com./B. A.----					100	--	100
Group-V	BCA-P28	Practical based on BCA21, BCA22 & BCA24	--	--	--	--	--	50	50
TOTAL							400	50	450

NOTE: General BCA Examinations rules are same as B. Sc. (Computer Sc.)/(IT).

BCA I YEAR

BCA-11-FUNDAMENTALS OF COMPUTERS AND PC SOFTWARE

MAX MARKS: 40

13

MIN MARKS:

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 colour, 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 Mansfield, Microsoft Office, BPB Publication
6. Fundamentals of Computers: P. K. Sinha
7. System Analysis and Design by Elias M Awad.

REFERENCES 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 CIRCUITS: Logic gates, AND, OR, NOT, GATE & their truth tables, NOR NAND & XOR gates. **BOOLEAN ALGEBRA:** Demorgan's theorem. **MAP SIMPLIFICATION:** 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 ORGANISATIONS- 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. **INTRODUCTION TO MOTHER BOARD:** Idea about different cards and their functions, SMPS.

Unit-IV

INPUT-OUTPUT ORGANISATION: 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 associativity.

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 from 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, strev 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
MARKS: 13

MIN

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 Components:** Servers, 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 in Web 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
13

MIN MARKS:

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, “Combinatorics: 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 Drodzok, “**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 Defined 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: 1NF, 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 ,Subtract, 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 Subtract 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 Employee 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/O devices organization, I/O devices organization, I/O devices organization, I/O 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 Amrishi 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, Matrices:Rank & nullify of a matrixs,Eigen Values and Eigen Vectors, Caley Hamilton theorem,Convergence of Solution

Unit-II

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-Cotes'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 Modified 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 Lagrange's 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 Difference Interpolation Formula .

**BACHLOR OF COMPUTER APPLICATION (BCA) SYLLABUS
FIFTH SEMESTER**

S. NO,		SUBJECT NAME	EXAMINATIONS SCHEME		
			Dur. Hrs.	Max. Marks	Min Mark
1.	5BCA1	Network Technology	3	100	40

2.	5BCA2	Programming with ASP.Net	3	100	40
3.	5BCA3	Java Programming	3	100	40
4.	5BCA4	R.D.B.M.S. (Oracle)	3	100	40
5.	5BCA5	Internal Assessment & Term work	3	100	50
6.	5BCA6	Computer Lab V.A.(ASP.Net and Java)	3	100	50
7.	5BCA7	Computer Lab V.B.(Oracle)	3	100	50

SIXTH SEMESTER

6BCA1

Major Project Dissertation-400 MARKS

Viva Voce-100 MARKS

Total-500 MARKS

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 net-working 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”

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 font 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.

Reference BOOKS:-

1. The Complete Reference ASP.NET By Mathew Macdonald-TMH.
2. Professional ASP.NET – Wrox Publication.
3. VB.NET Programming Black Book 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 Book 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)

5BCA6 Computer lab V- A(Asp.Net & Java)

LIST OF PRACTICALS

- Explain grid view control in ASP.Net.
- Explain textbox and button controls in asp.net.
- Explain dropdown list control in asp.net.
- Explain web service in asp.net.
- Explain the connectivity in asp.net with sqlserver with proper database.
- Explain html tags with examples.
- Write a program in asp.net to add two numbers using visual basic.
- Write a program in asp.net to swap two numbers.
- Write a suitable code in html to create a table in asp.net.
- Write a program for displaying messages in different headings formats.
- Elaborate radio button control with example in html.
- Write a program in html for pull down and list box control.
- Write a program in html to design a form.
- Write a program in html designing frames.
- Write a program in asp.net using text button and label controls.
- Display image on run using Ad-rotator control. Explain all ways in asp.net.
- Explain any three validation controls in asp.net with codes and examples.
- Write a program for displaying simple message.
- Write a program for concatenating two strings .(Example first and last names)

- Write a program to check whether the entered number is palindrome or not.
- Write a program to check whether the entered number is even or odd.
- Write a program using for each loop.
- Write a program for adding first 10 numbers using for loop.
- Write a program for finding factorial of a given number using do-while loop.
- Write a program for printing your names 10 times.
- Write a program to explain switch case.
- Write a program to find reverse of a given number.
- Explain asp.net basic controls with examples any two.
- Write a program in asp.net to swap two numbers.
- Write a suitable code in html to create a table in asp.net.
- Write a program for displaying messages in different headings formats.
- Elaborate radio button control with example in html.
- Write a program in html for pull down and list box control.
- Write a program in html to design a form.
- Write a program in asp.net using text button and label controls.
- Explain any three validation controls in asp.net with codes and examples.
- Write a program for concatenating two strings .(Example first and last names)
- Write a program to check whether the entered number is palindrome or not.
- Write a program to check whether the entered number is even or odd.
- Write a program for adding first 10 numbers using for loop.
- Write a program for finding factorial of a given number using do-while loop.

- Write a program for printing your names 10 times.
- Write a program to explain switch case.
- Write a program to find reverse of a given number.
- Explain asp.net basic controls with examples any two.

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, Fonalizer 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 from applications, preparing to write Applets, Building, applet code, applet life cycle, Creating an Executable applet, Designing a web 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. Balaguruswamy.
2. Peter Nortons Guide To Java Programming By : Techmedia 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

5-BCA-4 : R. D. B. M. S. (ORACLE)

Time : 3 Hrs

Max. Marks-100

Min. Marks - 40

UNIT-I: ORACLE PHILOSOPHY : ORACLE DBA, SQL, Pluse Oracle Forms, Report writer.

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.

Reference Books :

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

5BCA7 COMPUTER LAB V -B (ORACLE)

LIST OF PRACTICALS

Waq To Insert Some New Records In Emp Table.

Waq To List The Number Of Employees Whose Name Is Not 'Ford', 'James' 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 Employe 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 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.

Create A User Defined Procedure To Find Number Of Vowels In A Given Word.

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 .

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

Create The Table Client_Master

Fieldname	Datatype	Size
Client_No	Varchar2	6
Name	Varchar2	20
Address	Varchar2	30
City	Varchar2	10
Phone	Number	10

- 7) Enter 5 Records
- 8) Find Out The Names Of All The Clients.
- 9) Retrieve The Entire Content Of Client_Master Table.
- 10) List All The Clients Who Are Located In Bombay.
- 11) Change The City Of Client_No "C005" To Bombay.
- 12) Add A Column "Salary" Of Datatype 'Number' And Size 5 To Client_Master Table.

NOTE:-

- Students has to work on live project
- Name of Firm /Organization/Industry concerned with the project.
- **Marks Distribution**
 1. **Project Preparation-400 marks**
 - a. Synopsis based on problem
 - b. Design and Implementation Phase
 2. **Viva Voce-100 Marks**
 - a. Powerpoint presentation -50 marks
 - b. Viva voce-50 marks

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.

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J. Process Description including DFDs and ER diagram

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K. Future scope and further enhancement**L. 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.

M. References

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

