



RANI DURGA VATI VISWAVIDYALAYA, JABALPUR

Bachelor of Computer Applications (BCA)

Scheme of Examination as per Choice Based Credit System (CBCS)

BCA First Semester								
Course Code / S. No.	Subject Name	Periods Per Week			Credits	Maximum Marks Theory Slot		Maximum Practical Performance / Viva
		L	T	P		End Sem. Exam (External)	Tests(Two)/ Assignment (Internal)	
BCA-101	Fundamental of Computer and Programming	3	1	-	4	60	40	-
BCA-102	Operating System (DOS, Windows and Unix)	3	1	-	4	60	40	-
BCA-103	Mathematical Foundation	3	1	-	4	60	40	-
BCA-104	Programming in C	3	1	-	4	60	40	-
BCA-105	Communication English	3	1	-	4	60	40	-
BCAL-106	Computer Lab-I (Prog. in C)	-	-	4	2	-	-	50
BCAL-107	Internal Assessment & Team Work	-	-	4	2	-	-	50
	TOTAL				24	300	200	100

* L: Lecture, T: Tutorial, P: Practical, 1 Credit=1 hr. (Theory), 1 Credit=2 hrs. (Practical)

** Minimum Passing marks in Theory: 40% and Practical: 50%

BCA Second Semester					
Course Code	Subject Name	Periods Per Week	Credits	Maximum Marks Theory Slot	Maximum Practical Performance

/ S. No.		L	T	P		End Sem. Exam (External)	Tests (Two) /Assignment (Internal)	End Sem. Practical Performan / Viva
BCA-201	Computer System Architecture	3	1	-	4	60	40	-
BCA-202	Graphical User Interface Prog.with Visual Basic	3	1	-	4	60	40	-
BCA-203	Data Structure and Algorithms	3	1	-	4	60	40	-
BCA-204	Cyber Security	3	1	-	4	60	40	-
BCA-205	Numerical Methods & Analysis	3	1	-	4	60	40	-
BCAL-206	Computer Lab-II (Prog. in DS, VB)	-	-	4	2	-	-	50
BCAL-207	Internal Assessment & Team Work	-	-	4	2	-	-	50
	TOTAL				24	300	200	100

* L: Lecture, T: Tutorial, P: Practical, 1 Credit=1 hr. (Theory), 1 Credit=2 hrs. (Practical)

** Minimum Passing marks in Theory: 40% and Practical: 50%

BCA Third Semester								
Course Code / S. No.	Subject Name	Periods Per Week			Credits	Maximum Marks Theory Slot		Maxim Pra
		L	T	P		End Sem. Exam (External)	Tests (Two) /Assignment (Internal)	
BCA-301	Data Base Management System	3	1	-	4	60	40	-
BCA-302	OOPS & Programming in C++	3	1	-	4	60	40	-
BCA-303	PHP & MYSQL	3	1	-	4	60	40	-
BCA-304	Principles of Management							

		3	1	-	4	60	40	-
BCA-305	Elective-I	3	1	-	4	60	40	-
BCAL-306	Computer Lab-III-A (C++)	-	-	4	2	-	-	50
BCAL-307	Computer Lab-III-B (PHP &MySQL)	-	-	4	2	-	-	50
	TOTAL				24	300	200	100

* L: Lecture, T: Tutorial, P: Practical, 1 Credit=1 hr. (Theory), 1 Credit=2 hrs. (Practical)

** Minimum Passing marks in Theory: 40% and Practical: 50%

BCA Fourth Semester								
Course Code / S. No.	Subject Name	Periods Per Week			Credits	Maximum Marks Theory Slot		Maximum Practical Performance / Viva
		L	T	P		End Sem. Exam (External)	Tests (Two) /Assignment (Internal)	
BCA-401	VB.NET	3	1	-	4	60	40	-
BCA-402	Computerized Financial Management (Tally)	3	1	-	4	60	40	-
BCA-403	Theory of Operating Systems	3	1	-	4	60	40	-
BCA-404	System Analysis & Design Management Information System	3	1	-	4	60	40	-
BCA-405	Elective-II	3	1	-	4	60	40	-
BCAL-406	Computer Lab-IV (VB.Net & Tally)	-	-	4	2	-	-	50
BCAL-407	Minor Project (VB.Net)	-	-	4	2	-	-	50

	TOTAL				24	300	200	100
--	--------------	--	--	--	-----------	------------	------------	------------

* L: Lecture, T: Tutorial, P: Practical, 1 Credit=1 hr. (Theory), 1 Credit=2 hrs. (Practical)

** Minimum Passing marks in Theory: 40% and Practical: 50%

BCA Fifth Semester								
Course Code / S. No.	Subject Name	Periods Per Week			Credits	Maximum Marks Theory Slot		Maxim Pra End Sem. Practical Performan / Viva
		L	T	P		End Sem. Exam (External)	Tests (Two) /Assignment (Internal)	
BCA-501	Computer Networks	3	1	-	4	60	40	-
BCA-502	ASP.Net	3	1	-	4	60	40	-
BCA-503	Java Programming	3	1	-	4	60	40	-
BCA-504	Data Mining	3	1	-	4	60	40	-
BCA-505	Elective-III	3	1	-	4	60	40	-
BCAL-506	Computer Lab-V-A (ASP.Net & Java)	-	-	4	2	-	-	50
BCAL-507	Computer Lab-V-B (Oracle)	-	-	4	2	-	-	50
	TOTAL				24	300	200	100

* L: Lecture, T: Tutorial, P: Practical, 1 Credit=1 hr. (Theory), 1 Credit=2 hrs. (Practical)

** Minimum Passing marks in Theory: 40% and Practical: 50%

BCA Sixth Semester		
Course Code / S. No.	Subject Name	Maximum Marks Slot
BCA-601	Major Project	400
	Dissertation	100
	Viva Voice	
	Total	500

List of Elective Courses Identified- Computer Science (CS) and Non Computer Science (NCS)

Elective: I

Course Code	Subject Name
BCA-305- EL-1	Software Engineering
BCA-305- EL-2	Internals of Operating Systems
BCA-305- EL-3	Cloud Computing
BCA-305- EL-4	Computer Forensics Analysis and Investigation

Elective: II

Course Code	Subject Name
BCA-405- EL-1	Systems Programming
BCA-405- EL-2	Open Source Software Development
BCA-405- EL-3	Compiler Design
BCA-405- EL-4	Artificial Intelligence

Elective: III

Course Code	Subject Name
BCA-505- EL-1	Digital Image Processing
BCA-505- EL-2	System Simulation & Modeling
BCA-505- EL-3	Software Project Management
BCA-505- EL-4	Software Testing

Note:

1. Total number of credit of BCA programme=140
2. Elective subject shall be offered provided 1/3 of total strength of students in the class opt for the paper
3. Overall Minimum 130 credits are mandatory to earn BCA degree
4. Minimum 40 lectures is mandatory for each course

BCA First Semester

BCA-101: FUNDAMENTALS OF COMPUTER AND PROGRAMMING

Max. Marks-60

Min. Marks - 40

UNIT-I

INTRODUCTION TO COMPUTER: Computer system characterization & capabilities. Speed, Accuracy, Reliability, Memory Capability, Repeatability.

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

TYPES OF COMPUTER: Analog Digital & Hybrid, General and Special Purpose Computers.

COMPUTER GENERATIONS: Characteristics of Computer Generations Computer Systems Micros, Minis & Mainframes.

INTRODUCTION TO PC: The IBM Personal Computer, Type of PC systems PC, XT & AT, Pentium PCS, Limitations of Micro-computer.

UNIT-II

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

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

UNIT-III

DATA PROCESSING: DATA, Data Processing system, Storing Data, Processing data.

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

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

UNIT-IV

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

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

UNIT – V

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

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

TEXT BOOKS:

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

Reference Books:

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

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

BCA-102: OPERATING SYSTEMS (DOS, WINDOWS and UNIX)

Max. Marks-60

Min. Marks - 40

UNIT-1: (DOS)

Introduction - History & Version of Dos.

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

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

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

UNIT-II: (WINDOWS 95/98)

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

Windows Accessories: Calculator, Notepad, Paint, WordPad, Character map. Windows Explorer: Creating folders and other Explorer facilities.

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

UNIT- III

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

UNIT-IV

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

UNIT-V

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

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

TEXT BOOKS:

1. Annurag Seetha, Introductions to Computers and information Technology, RAM Prasad & Sons, Bhopal (UNIT-1)
2. Rajeev Mathur, Learning Window98 step by step, BPB Publication. (UNIT-II)

3. Sumitabh Das, UNIX: Concepts & Applications, Tata McGraw Hill 1998 (UNIT-III, IV, V)

REFERENCE BOOKS:

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

BCA-103: MATHEMATICAL FOUNDATIONS

Max. Marks-60

Min. Marks - 40

UNIT-I

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

UNIT-II

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

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

UNIT-III

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

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

UNIT-IV

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

UNIT-V

Partial differentiation: partial differentiation of Higher order. Homogeneous functions, Total differentiation, Differentiation of composite & Implicit functions. Changes of variables Taylors Theorem for several Variables.Simple problems of maxima & minima.

BOOKS :

1. A Text books of Discrete Mathematics by D.C. Agrawal, Thakur & Shrivastava.
2. A Text books of Elementary calculus By D.C. Agrawal, Thakur & Harikishan.
3. A Text Book of Vector Calculus & Geometry By D.C. Agrawal.
4. A Text Book of Discrete Mathematics By Thakur & Sharma.
5. Calculus : By Thakur & Harikishan.
6. Differential Calculus : BY Gorakh Prasad.

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

BCA-104: PROGRAMMING IN C

Max. Marks-60
Min. Marks - 40

UNIT-I

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

UNIT-II

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

UNIT-III

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

UNIT-IV

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

UNIT-V

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

Text Book:

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

Reference Books:

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

BCA-105: COMMUNICATIVE ENGLISH

Max. Marks-60

Min. Marks - 40

UNIT-1

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

UNIT-II

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

B-1 PARAGRAPH WITING:

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

B-2 COMPOSITION WRITING:

1. Objective
2. Introduction
3. A Model Composition for study
4. Type of Composition
 - a) Expository
 - b) Argumentative
 - c) Narrative
 - d) Descriptive
 - e) Tech Techniques of writing & good composition.

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

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

B-4 REPORT WRITING:

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

UNIT-IV

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

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

UNIT-V

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

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

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

BOOK:

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

BCAL-106: Computer Lab-I (Programming in C, MS Office)

LIST OF PROGRAMS:

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

18. Write a program to create a pyramid structure 1 12 123
1234
19. Write a program to create a pyramid structure 1 22 333
4444
20. Write a program to reverse a string.
21. Write a program to find whether a given string is PALINDROME or not.
22. Write a program to input 10 numbers add it and find it's average.
23. write a program to generate series
 $1+1/2!+1/3!+-----+1/n!$
24. WAPto print table of any number.
25. WAPto print Fibonacci series
26. WAPto find length of string without using function.
27. WAPto perform all arithmetic operations using case statement.
28. WAPto check entered number is Armstrong or not.

29. Write a program to print following pyramid structure:-1

```
1    2
1    2 3
1    2 3 4
```

30. Write a program to print following pyramid structure:-

```
1 2 3
4 5 6
7 8 9 10
```

BCA Second Semester

BCA-201: COMPUTER SYSTEM ARCHITECTURE

Max. Marks-60

Min. Marks - 40

UNIT-I

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

UNIT-II

DIGITAL LOGIC CIRCUITS-Logic gates, AND,OR,NOT,GATE & their truth tables, NOR NAND & XOR gates.

BOOLEAN ALGEBRA : Demorgan's theorem.

MAP SIMPLIFICATION : Minimization techniques, X, Map. Sum of product & product of sums.

COMBINATIONAL & SEQUENTIAL CIRCUITS : Half address full address, full subtractor, Flip-Flops-RS, & T Flip-Flops, Shift registers RAM AND ROM.

UNIT-III

CPU ORGANISATIONS-ALU & CONTROL CIRCUIT : Idea about arithmetic circuit program control, Instruction sequencing. **INTRODUCTION TO MICROPROCESSOR**:Microprocessor Architecture (3086), System buses, Register, program counter, Block diagram of a Micro Computer System. Microprocessor control signals, Interfacing devices.

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 & A synchronous Data Transfer Handshaking, A synchronous serial transfer, I/O processor.

UNIT-V

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

BOOK : Computer System Architecture by : M. MORRIES MANO

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

BCA-202: GRAPHICAL USER INTERFACE PROGRAMMING WITH VISUAL BASIC

Max. Marks-60

Min. Marks - 40

UNIT-1

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

UNIT-II

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

UNIT-III

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

UNIT-IV

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

UNIT-V

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

TEXT BOOK:

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

REFEREBCE BOOKS:

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

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

BCA-203: DATA STRUCTURE & ALGORITHMS

Max. Marks-60
Min. Marks - 40

UNIT-I

INTRODUCTION TO DATA STRUCTURE: The concept of Data structure, Abstract Data structure. Analysis of Algorithm, The concept of List.

STACKS AND QUEUES : Introduction to stacks & primitive operations on stack, Stack as an abstract Data type, Multiple stack,

Stacks applications : Infix, Post Fix, prefix and recursion, Introduction to queues, primitive operation on the queues, Queue as abstract Data type, Circular queue, Dequeue, Priority queue.,

UNIT-II

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

UNIT-III

TREES : Basic terminology, Binary trees, Tree representations as array & linked list Binary tree representations, Traversal of binary trees; in order, Preorder & Post order, Application of binary trees. Threaded binary tree. B-tree & Height balanced tree, Binary tree representation of trees, Counting binary trees.

UNIT-IV

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

UNIT-V

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

BOOKS:

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

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

BCA-204: CYBER SECURITY

Max. Marks-60

Min. Marks - 40

UNIT - I

Cyber Crime: Introduction, Definition (cyberspace, cyber squatting, cyber punk, cyber warfare and cyber terrorism), cyber crime & information security, Cyber criminals, Classifications of cyber crime :- Email, spoofing, spamming, cyber defamation, internet time theft, salami attack, data diddling, forgery, web jacking, news group spam, online frauds, pornographic offences, s/w piracy, computer sabotage, email bombs, Usenet's newsgroups, computer intrusions, password sniffing, credit card frauds, identity theft.

UNIT -II

Cyber Offenses: Introduction (Hackers, crackers, Phrasing, war dialer, patriot hacking) Categories of cyber crime, How Criminals plan the attacks, Reconnaissance, passive attacks, Active attacks, Scanning the gathered information, attacks (gaining and maintaining the system access, social engineering, classification, cyber stalking, cyber café & cyber crimes, Botnets, Attacks vectors).

UNIT -III

Cyber Crime : Mobile and wireless Devices, Introduction, Proliferation of mobile & wireless devices, Trends in mobility, credit card frauds in mobile & wireless computing, Types and techniques of credit card frauds, Registry setting for mobile devices, Authentication services security. Cryptographic security for mobile devices, LDAP Security & RAS security. API Security for mobile computing application.

UNIT- IV

Tools & Methods used in cyber crime : Proxy servers & Anonymizers,

Phishing ,password cracking : online attacks, offline attacks, strong, random & weak password, Key loggers & spy wares, virus and worms, Trojans Horses and Backdoors, stenography, Dos & ddo attacks, sql injections, buffer overflow, Attacks on wireless networks.

UNIT- V

The Legal perspectives, computer security laws, need of cyber law, The Indian IT ACT : cyber crime and punishment, cyber law.

BOOKS:

1. COMPUTER SECURITY FUNDAMENTALS: By Chuck Easttom
2. CYBERSECURITY AND CYBERWAR: By P. W. Singer and Allan Friedman
3. STRATEGIC CYBER SECURITY: By KENNETH GEERS.

BCA-205: NUMERICAL METHODS & ANALYSIS

Max. Marks-60

Min. Marks - 40

UNIT-I

COMPUTER ARITHMETIC: Binary number system. Octal & Hexadecimal system, Floating point Arithmetic, Transcendental and polynomial equations, Direct & Indirect methods, fixed point Iteration methods, Regula falsi method.

UNIT-II

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

UNIT-III

SYSTEM OF LINEAR ALGEBRAIC EQUATIONS: Gramer Ruie (Lu) Decomposition of Matrix, Gauss Elimination methods, Consistent and inconsistent, System of equations Jacobi iteration method, Gauss seidel iteration method index of convergence.

UNIT-IV

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

UNIT-V

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

BOOKS:

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

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

BCAL-206:Computer Lab-II (Programming in DS, VB)

LIST OF PRCATICALS (VB):

1. WAP to add the two integers.
2. WAP to subtract the two integers
3. WAP to create the table of no 2
4. WAP to create the table of any given no 5 WAP to display the even nos
5. WAP to display the odd Nos
6. WAP to create the marksheet
7. WAP to generate the cash memo of bookshop
8. WAP to change the color of form control.
9. WAP to change the font color of textbox
10. WAP to change the back color of text box using scroll bar 12 WAP to set the font style using check box
11. WAP to print the first 10 integers
12. WAP to add the items in list box at run time
13. WAP to display the pictures using combo box control 16 WAP to display the current time and date
14. WAP to store the marks of 10 students using data control 18 WAP to store the data of students using ado control.
15. WAP to add picture in picture box
16. WAP using check box and radio buttons

LIST OF PROGRAMS (DS):

1. Write a program to find the factorial of a given no using Recursion.
2. Write a program to check whether entered string is palindrome or not.

3. Write a program for finding the sum of given matrices of order $m \times n$.
4. Write a program for finding the multiplication of given matrices of order $m \times n$.
5. Write a program for bubble sorting.
6. Write a program for linear search.
7. Write a program for Binary Search.
8. write a program for selection sorting,
9. Write a program for Quick sorting.
10. Write a program for Insertion sorting.
11. Write a program to print fibonacci series using recursion.
12. Write a program to perform insertion and deletion operation in the stack.
13. Write a program to perform insertion and deletion operation in the Queue using StaticImplementation.
14. Write a program to Perform Insertion and Deletion operation in Queue using Dynamic Implementation.
15. Write a program to Insert a Node at the beginning in singly Linklist.
16. Write a program to Insert a Node at the Middle in Singly Linklist.
17. Write a Program to Insert a Node at the Last in Singly Linklist.
18. Write a Program to Delete a Node from the Begining in Singly Linklist.
19. write a Program to Delete a Node from the Middle in the Singly Link list.
20. Write a Program to Delete a Node from the last in the Singly Link list.
21. Write a program to traverse all the nodes in Singly Link List.
22. Write a Program to Insert a Node in the Beginning in the Circular Linklist.
23. Write a Program to Insert a Node at the last circular Link list.
24. Write a Program to perform all the insertion operations in the singly link list Using Switch Case.

25. Write a Program to perform all the deletion operations in the Singly link list Using Switch Case.
26. Write a Program to Count the no of Nodes in Binary Tree.
27. Write a program to Evaluate postfix Operation.
28. Write a Program to convert Infix operation to Postfix Operation.

BCA Third Semester

BCA-301: DATA BASE MANAGEMENT SYSTEM

Max. Marks-60
Min. Marks - 40

UNIT-1

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

UNIT-II

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

UNIT-III

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

UNIT-IV

RELATIONAL DATABASE DESIGN : Relational Algebra, Traditional Set Operations, Attribute Name for Derived Relations, Special Relational Operations, Relational Calculus, Type-Oriented

Relational Calculus, Further Normalization. Functional Dependence, First, Second and Third Normal Forms, Relations with More than One Candidate Key, Good and Bad Decompositions, Fourth Normal form Fifth Normal Form.

UNIT-V

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

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

BOOKS:

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

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

BCA-302: OOPS AND PROGRAMMING in C ++

Max. Marks-60

Min. Marks - 40

UNIT-1

PRINCIPLES OF OBJECT ORINETED PROGRAMMING: SoftwareCrisis, Software Evaluation. A Look at procedure oriented Programming, Object-Oriented Programming Paradigm, Basis Concepts of Object-Oriented Programming, Benefits of OOP, A Simple C++ Program, C++ Statements, An examplewith class, Structure of C++ Program, Creating. The source File, Compiling and Linking.

UNIT-II

TOKENS EXPRESSIONS AND CONTROL STRUCTURES: Introduction, Tokens, Keywords, Identifiers Basis Data Types, User Defined Data Types, Derived Data Types Symbolic Constants, Type Compatibility, Declaration of Variables, Dynamic Initialization of V Variable, Dynamic Initialization of Variables, Reference Variables, Operators Memory Management Operators, Manipulators, Type CastOperator, Expressions and Implicit Conversions, Operator, Overloading, ControlStructures.

FUNCTION ++ : The Main Function Prototyping, Call by Reference, Return byreference, Inline Functions, Default Arguments, const Arguments, Function Overloading, Friend and Virtual Functions.

UNIT-III

CLASSES AND OBJECTS :‘C’ Structures Revisited, Specifying A class, Defining Member Functions, A C++Program with class, making An Outside Function. Inline, Nesting of member Functions,Private member Functions, Arrays A class, Memory Allocation for Objects, Static DataMembers, Static Member functions, Arrays of Objects As Function Arguments.

UNIT –IV

CONSTUCTIONS AND DESTRUCTORS :Introduction, Constructors, Parameterized Constructors, Multiple Constructors in a classwith default Arguments, Dynamic Initialization of Objects, Copy Constructor, Constructors, Constructing, Two-Dimensional Arrays, Destructors.

OPERATORS OVERLOADING AND TYPE CONVERSIONS :Introduction Defining Operators Overloading Unary Operators, Overloading Binary Operators, Using Friends, Manipulation of Strings Using Operators, Rules foroverloading operators, Type Conversions.

UNIT –V

INHERITANCE: EXTENDING CLASSES:Introduction Defining Derived Classes, Single Inheritance, Making A Private MemberInheritable, Multiple Inheritance, Multilevel Inheritance, Hierarchical Inheritance, Hybrid Inheritance.

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

BOOKS:

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

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

BCA-303: PHP and MySQL

Max. Marks-60

Min. Marks – 40

Unit-I

Introduction to PHP: History of PHP, Versions of PHP, Features of PHP, Advantages of PHP over Other Scripting Languages, Installation and Configuration of PHP, Data Types in PHP, PHP Syntax, Comments, PHP Variables and Constants, Scope of Variables, PHP String, String Manipulation, PHP Operators, Precedence of Operators, Expressions, Creating a PHP Script, Running a PHP Script.

Unit-II

Basic HTML Embedding PHP in HTML, Passing Information between Pages, PHP \$_GET, PHP \$_POST, PHP Conditional Statements, PHP Looping Statements, Break, Continue, Exit, **PHP Functions:** Built-in and User Defined Function, Regular Expression Functions, Mathematical, Date and Time Functions,

PHP Arrays: Creating Array and Accessing Array Elements,

Unit-III

PHP File Permissions, Working with Files: Opening, Closing, Reading, Writing a File; **Working with Directory:** Creating, Deleting, Changing a Directory;

Working with Forms: Introduction to a Web Form, Processing a Web Form, Validating a Web Form, Input Validation, PHP with Client Side Scripting Language, Exception and Error Handling in PHP, Introduction to Cookies and Session Handling,

Unit-IV

Working with Database: PHP-Supported Databases;

Using PHP & My SQL: Installation and Configuration of My SQL on Windows, Checking Configuration, Connecting to Database, Selecting a Database, Adding Table and Altering Table in a Database, Inserting, Deleting and Modifying Data in a Table, Retrieving Data, Performing Queries, Processing Result Sets,

Unit-V

Code Re-use, require(), include(), and the include path, File System Functions and File Input and Output, File Uploads, Use of CSS, Introduction to Object Oriented Programming with PHP, Installing and Configuring Apache to use PHP on Windows, php.ini File,

TEXT & REFERENCE BOOKS:

1. PHP & MY SQL, BY VIKRAM VASWANI, TMH PUBLICATIONS
2. PHP ESSENTIALS, BY JULIE C. MELONI, BPB PUBLICATIONS
3. PHP 5 AND MY SQL BIBLE, BY TIM CONVERSE AND JOYCE PARK, WILEY-DREAMTECH INDIA PUBLICATIONS
4. WEB TECHNOLOGIES, BLACK BOOK, DREAMTECH PRESS
5. ATKINSON, LEON. CORE PHP PROGRAMMING, NEW YORK: PRENTICE HALL
6. LEARNING PHP 5, BY DAVID SKLAR PUBLISHER O'REILLY MEDIA
7. MASTERING PHP, BY CHARLES, PUBLISHER: BPB
8. EXPERT PHP AND MYSQL, WROX PROGRAMMER TO PROGRAMMER, WROX PRESS, 2010
9. PHP FOR ABSOLUTE BEGINNERS, APRESS, 2009
10. SAMS TEACH YOURSELF CSS IN 24 HOURS (2ND EDITION), SAMS PUBLISHING, 2006

BCA-304: Principles of Management

Max. Marks-60

Min. Marks - 40

Unit-I

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

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

Unit-II

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

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

Unit-III

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

Motivation-Meaning definition, characteristics objectives, types of motivation, theory of motivation. Leadership - Introduction-Meaning, Definition, characteristics, functions and theories of leadership.

Unit-IV

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

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

Unit-V

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

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

Text Books-

1. S. C. Saxena- Sahitya Bhavan Publication

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

Reference Books-

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

BCA-305: Elective-I

Note: - To see atlist of elective papers

BCAL-306: Computer Lab-III-A (C++)

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.
31. Write a program to demonstrate the use of inline member function.
32. Write a program to demonstrate the use of parameterized constructor.

BCAL-307: Computer Lab-III-B (PHP and MySQL)

LIST OF PRACTICALS (PHP)

1. Write a Php program for the student registration form and draw an image.
2. Write a Php program to enter the no of terms and in the next page generate the table with given rows and cols.
3. Write a Php program for the student registration form and display the information in the another page with the effective design.
4. Write a Php program for the use of different String Functions using the dynamic page in all the direction and display result in the middle page.
5. Write a Php program for the use of different Array Functions using the dynamic page in all the direction and display result in the middle page.
6. Write a Php program for the use of Insert, Update, Delete, Display in array and perform the operation.
7. Write a Php program for the use of Database Connectivity and perform Insert, Update, Delete, Display operations.
8. Write a Php program for the student registration form with database connectivity and perform Insert, Update, Delete, and Display Operations.
9. Write a Php program for the use of read & write operations on the file.
10. Write a Php program to display the information about the directory or file like (filename, file type, file size, Date & Time).
11. Write a Php program for the uploading the images in a directory.
12. Write a Php program for the student registration form with database connectivity allow Insert, Update, Delete, Display Operations with navigation Controls and also the use of Class.
13. Write a Php program for the student registration form with database connectivity and also image creation.
14. Write a Php program for the use of Image Creation.
15. Write a Php program for the use of Image Creation & put Arc & Rectangle on it.
16. Write a Php program for Image Uploading and also create the same image with the different attributes like size, name, etc....
17. Write a Php program for the use of Xml.
18. Write a Php program for the use of SAXparser with the student Biodata Display in the tree format.
19. Write a Php program to load a simple xml file.
20. Write a Php program for sending the mail.

LIST OF PRACTICALS (MySQL)

1. WAP To Insert Some New Records In Emp Table.
2. WAP To List The Number Of Employees Whose Name Is Not 'Ford', 'Jams' Or 'Jones,
3. WAP To List The Name And Salary And Sort Them In Descending Order Of Their Salary
4. Write Pl/Sql Code To Add Two No.
5. WAP To List The Details Of Employees Whose Name Is Starts From 'A'
6. WAP To Delete All Records From Emp Table
7. WAP To Insert Values In 3 Fields.
8. Write Pl/Sql Code To Print Table Of Entered No.
9. WAP To List The Student Name Having 'D' As Second Character.
10. WAP To List The Name And Salary And Sort Them In Descending Order Of Their Salary
11. Write Pl/Sql Code To Calulate Total Salary Of Emp No 100
12. Write Pl/Sql Code To Find Greatest Among Two No.
13. WAP To List The Name And Salary And Sort Them In Descending Order Of Their Salary
14. Write Pl/Sql Code To Find Greatest Among 3 No.
15. WAP In Employee Table Find All The Manager Who Earns Between 1000 And 2000.
Display Record Of Employee Who Have Salary Between 1000 And 2000.
16. List The Name Salary And Department Number Of The Employee And Order Them By
Their Salary In Descending Order.
17. Write A Code In Pl/Sql To Print Nos From 1 To 10
18. 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.
19. WAP To Find The Employee Who Earns The Lowest Salary In Each Department.Display In
Ascending Order Of Salary.
20. Write A Code In Pl/Sql To Add ,sustract, Multiply And Divide 2 No According To Choice.

21. 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.
 22. Find The Name,Street & City Of Residence Of All Employee Who Works For 'Fbc'
 23. WAP To Find The Employee Who Earns The Lowest Salary In Each Department.Display In Ascending Order Of Salary.
 24. WAP To Update The Salary Of Employee Number 1902 To Rs 10,000
 25. Write A Pl./Sql Code To Add 3 Nos
 26. WAP To Find The Name,Street And City Of All Employee Who Works For 'Fbc' And Who Earn More Than 1000.
 27. WAP To Increase The Salary By 2000 And Rename The Column As "Newsalary"
 28. WAP To Find The Name,Street And City Of All Employee Who Works For 'Fbc' And Who Earn More Than 1000.
 29. Write Pl/Sql Code To Substract 2 Nos.
 30. WAP To Find Total Of Salaries Of All Employees From Emp Table
 31. WAP To Decrease The Salary Of Emp From 5000 And Rename Column As 'Newsalary'
 32. List The Employee Number Of Employee Who Belone To Department 10,20.
 33. 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.
34. WAP To Find Total Of Salaries Of All Employees From Emp Table
 35. WAP To Update The Salary Of Employee Number 1902 To Rs 10,000

36. 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.
37. Write A Pl/Sql Block To Find Factorial Of Any Given Number.
38. 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.
39. Write The Steps To Create A Form.
40. Create A Procedure That Accepts Two Numbers And Return Addition, Subtraction , Multiplication & Division Of Two Numbers. (Local Procedure)
41. 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.
42. Write A Pl/Sql Block To Print Fibnoccai Series 0 1 1 2 3 5 8....
43. 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
44. Write The Steps To Create A Form.
45. Create A User Defined Procedure To Find Number Of Vowels In A Given Word.
46. 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 .
47. Write A Pl/Sql Block To Find Hcf Of Two Positive Numbers
48. Write A Pl/Sql Block To Calculate Sum Of Digits $583 = 5+8+3= 16$
49. 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.
50. Write The Steps To Create A Form.

BCA Fourth Semester

BCA-401: Programming with VB.NET

Max. Marks-60
Min. Marks - 40

Unit –I

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

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

Unit – II

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

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

Unit – III

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

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

Designing Menus: Context Menu, Access & Shortcut Keys.

Unit- IV

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

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

Unit – V

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

Text & Reference Books:

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

BCA-402: COMPUTERIZED FINANCIAL MANAGEMENT (Tally)

Max. Marks-60

Min. Marks - 40

UNIT-I

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

UNIT-II

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

UNIT-III

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

UNIT-IV

Pay roll department, Preparation of pay roll. Preparation of wage record, Inventory account and store record.

UNIT-V

Inventory or stock control and cost accounting, Department demand and supply method of stock control Classification and condition of material report on material handling. Discuss computer methods. Practical Knowledge of computer accounting through Tally/ Ex/ Winca.

BOOKS:

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

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

BCA-403: THEORY OF OPERATING SYSTEMS

Max. Marks-60

Min. Marks - 40

UNIT-I

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

UNIT-II

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

UNIT-III

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

UNIT-IV

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

UNIT-V

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

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

BOOK:

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

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

BCA-404: SYSTEM ANALYSIS AND DESIGN MANAGEMENT INFORMATION SYSTEM (SAD/MIS)

Max. Marks-60

Min. Marks - 40

UNIT-I

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

UNIT-II

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

UNIT-III

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

UNIT-IV

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

UNIT-V

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

TEXT BOOKS:

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

3. A. Mansoor , System analysis & Design, Pragma Publication (Hindi Medium)

REFERENCE BOOKS:

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

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

BCA-405: Elective-II

Note: -To see at list of elective papers

BCAL-406: Computer Lab-IV-A (VB.Net, Tally)

LIST OF PRACTICALS:

1. WAP to add the two integers.
2. WAP to subtract the two integers
3. WAP to multiply the integers using function
4. Create a function to display the message hello on the text box. 5 Create the function addition to add the two nos.
5. Create the function sub to subtract the two nos
7. WAP to change the color of form control at run time. 8 WAP to add the item in listbox control at run time.
8. WAP to transfer the item from one listbox to combo box at run time. 10 WAP to display the image on form control at run time.
9. Design the menu for the following:-Color:-Red,Green ,Blue Exit :-Yes,No.
10. WAP to display hello message in textbox control.
11. Design the student database for Sname, rollno, class and result and connect the datagrid control.
12. Write the steps for creating a table employee with eid,ename,department,basic in access and store the records in database using database connectivity.
13. WAP to design the tool bar in vb.net.

BCAL-407: Minor Project (VB.Net)

BCA Fifth Semester

BCA-501:Computer Network

Max. Marks-60

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, Baseband and Broadband transmission, Network Media types – properties & specialties, comparative study, Network adapters working principals configuration and selection.

UNIT-III

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

UNIT-IV

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

UNIT-V

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

TEXT BOOKS:

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

REFERENCE BOOKS :

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

BCA-502: Programming with ASP.Net

Max. Marks-60

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# .NET: similarities and differences from JAVA, Structure of C# program.

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

TEXTBOOKS:-

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

BCA-503: JAVA PROGRAMMING

Max. Marks-60
Min. Marks - 40

UNIT-I

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

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

UNIT-II

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

UNIT-III

CLASSES OBJECTS AND METHODS: Defining a class, adding variable and methods, creating objects, Accessing class members, Constructors, Methods overloading, Static members, Nesting of

methods, inheritance extending a class, overriding methods, Final Classes, Finalizer methods, Abstract methods and classes, Visibility control.

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

UNIT-IV

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

UNIT-V

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

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

BOOKS:

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

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

BCA-504:Data Mining

Max. Marks-60
Min. Marks - 40

UNIT-I

Introduction to Data Mining: Basic concepts in data mining, data measurement, exploratory data analysis, data visualization

Basic Principles of Data Mining: predictive modelling: classification and regression, model fitting as optimization, evaluation of predictive performance, overfitting, regularization

Other data mining tasks: clustering and pattern detection

UNIT-II

Text Mining: information retrieval and search, text classification, unsupervised learning.

Recommender Systems: recommender data, Netflix prize data, nearest neighbor algorithms, matrix decomposition algorithms, efficient algorithms for large data sets, modeling systematic effects

UNIT-III

Web Data Analysis: Web data: collection and interpretation, analyzing user browsing behaviour, learning from click through data, predictive modeling and online advertising, link analysis and the Page Rank algorithm

UNIT-IV

Social Network Analysis: descriptive analysis of social networks, network embedding and latent space models, network data over time: dynamics and event-based networks, link prediction.

UNIT-V

Neural networks, learning curves, and performance optimization: Simple neural networks, Multilayer Perceptrons, Learning curves, Meta-learners for performance optimization, ARFF and XRFF.

TEXT BOOKS:

1. Introduction to Data Mining: By Pang-Ning Tan, Michael Steinbach, Vipin Kumar
2. Data Mining Concept and Technique: By Jiawei Han, Jian Pei.
3. Arun K. Pujari, "Data Mining Techniques" Universities Press
4. Pieter Adriaans, Dolf Zantinge, "Data-Mining", Pearson Education

BCA-505: Elective-III

Note: - To see at list of elective papers

BCAL-506: Computer Lab-V–A (ASP.Net)

LIST OF PRACTICALS (ASP.Net)

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

20. Write a program # to check whether the entered number is palindrome or not.
21. Write a program # to check whether the entered number is even or odd.
22. Write a program # using for each loop.
23. Write a program # for adding first 10 numbers using for loop.
24. Write a program # for finding factorial of a given number using do-while loop.
25. Write a program # for printing your names 10 times.
26. Write a program # to explain switch case.
27. Write a program # to find reverse of a given number.
28. Explain asp.net basic controls with examples any two.
29. Write a program in asp.net to swap two numbers.
30. Write a suitable code in html to create a table in asp.net.
31. Write a program for displaying messages in different headings formats.
32. Elaborate radio button control with example in html.
33. Write a program in html for pull down and list box control.
34. Write a program in html to design a form.
35. Write a program in asp.net using text button and label controls.
36. Explain any three validation controls in asp.net with codes and examples.
37. Write a program # for concatenating two strings .(Example first and last names)
38. Write a program # to check whether the entered number is palindrome or not.
39. Write a program # to check whether the entered number is even or odd.
40. Write a program # for adding first 10 numbers using for loop.
41. Write a program # for finding factorial of a given number using do-while loop.
42. Write a program # for printing your names 10 times.

43. Write a program # to explain switch case.
44. Write a program # to find reverse of a given number.
45. Explain asp.net basic controls with examples any two.

BCAL-507: COMPUTER LAB-V-B (JAVA)

LIST OF PRACTICALS (JAVA)

1. WAP in java to calculate of diagonal elements. WAP in java to print unit matrix.
2. WAP in java to demonstrate creation of threads. WAP in java to demonstrate interface.
3. WAP in java to demonstrate multiple interface defining interface. WAP in java to demonstrate packages.
4. WAP in java to demonstrate applets.
5. 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.
6. WAP in java to calculate sum of upper triangular elements of matrix. WAP in java to calculate sum of lower triangular elements of matrix.
7. WAP in java to print digits of number in reverse order.
8. WAP in java to check entered number is Armstrong or not. WAP in java to perform addition of matrix.
9. WAP in java to perform subtraction of matrix.
10. WAP in java to print table of any number in proper format.
11. WAP in java to print following format.


```

      *
      ●      *
      * *      *
      * *      *      *
      * *      *
      ●      *
      *
```
12. WAP in java of swing using Action Listener. WAP in java to demonstrate labels and text field. WAP in java to demonstrate checkbox

13. WAP in java to demonstrate Mouse Motion Listener WAP in java to demonstrate event handling

BCA-601: Major Project & Viva Voce

NOTE:-Students has to work on live project