BCA PART I, II, III

Programme specific outcome

BCA programme has been designed to prepare graduates for attaining the following specific outcomes:

• An ability to apply knowledge of mathematics, computer science and management in practice.

•An ability to enhance not only comprehensive understanding of the theory but its application too in diverse field.

• The program prepares the young professional for a range of computer applications, computer organization, techniques of computer networking, software engineering, Commerce, Web Designing, Operating System, VB.Net and JAVA.

• An ability to design a computing system to meet desired needs within realistic constraints such as safety, security and applicability in multidisciplinary teams with positive attitude.

• An ability to communicate effectively.

• In order to enhance programming skills of the young IT professionals, the program has introduced the concept of project development in each language/technology learnt during semester.

Programme outcome

Upon graduation, students will be able to:

• Exhibit understanding of broad business concepts and principles.

• To identify and define problems and opportunities.

• Demonstrate the ability to identify a business problem, isolate its key components, analyse and assess the salient issues, set appropriate criteria for decision making, and draw appropriate conclusions and implications for proposed solutions.

• Demonstrate the capabilities required to apply cross-functional business knowledge and technologies in solving real-world business problems.

• Demonstrate use of appropriate techniques to effectively manage business challenges.

• Capable of recognizing and resolving ethical issues.

• Effectively communicate business issues, management concepts, plans and decisions both in oral and written form using appropriate supportive technologies.

• Develop various real time applications using latest technologies and programming languages.

• Possess strong foundation for their higher studies.

• Blend analytical, logical and managerial skills with the technical aspects to resolve real world issues.

• Become employable in various IT companies and government jobs.

Course outcome

BCA Part-I

BCA-101: Discrete Mathematics

After completion of this paper the students will be able to:

• Apply knowledge of computing and mathematics appropriate to the discipline.

• Analyse a problem and identify and define the computing requirements to solution.

BCA-102 : Computer Fundamentals

Upon completion of this course, students will be able to:

• Understand basic computer hardware architecture and be able to design fundamental logic circuits.

• Convert between different number systems and describe some different codes.

• Understand the functions of basic digital combinatorial circuits and sequential circuits.

• Understand the fundamental hardware components that make up a computer's hardware and the role of each of these components.

• Understand the role of CPU and its components

BCA-103 : Programming in 'C' Language

Upon completion of this course, students will be able to:

• Learn how to build by the algorithms for problems.

• Learn how to create pictorial representations of the program.

• Learn how to apply logic for problems.

• Enhance their programming skills.

BCA-104 : PC Software and Multimedia

Upon completion of this course, students will be able to:

• Gain hands-on experience of working in Microsoft products such as: MS Word, MS Excel and MS Powerpoint.

BCA-105 : Web Technology and E-Commerce

Upon completion of this course, students will be able to:

• Understand the various steps in designing Creative and dynamic website.

• Write HTML, JavaScript, CSS and PHP.

• Understand hierarchy of object oriented programming.

BCA-106 : Communication skills

The paper aims to conveying your idea or message to others clearly.

BCA Part-II

BCA-201: Calculus and Differential Equations

The primary object of this paper is the derivative of a function related notions such as the differential & their applications

BCA-202 : Database Management System

To acquaint practical knowledge about creating and manipulating data in database and also including knowledge on RDBMS concepts.

BCA-203 : Programming in 'C++`

Upon completion of this course, students will be able to:

• Apply C++ features to program design and implementation.

• Explain object-oriented concepts and describe how they are supported by C++ including

• Identifying the features and peculiarities of the C++ programming language.

• Use C++ to demonstrate practical experience in developing object-oriented solutions.

• Design and implement programs using C++.

• Analyze a problem description, design and build object-oriented software using good coding practices and techniques.

• Implement an achievable practical application and analyze issues related to object-oriented techniques in the C++ programming language.

BCA-204 : Computer Networks

Upon completion of this course, students will be able to:

• Learn the need to create a Network.

• Learn about different layers and protocols present in those layers.

• Learn to configure the network devices.

• Learn about IP -Addressing.

• Learn about Network Security.

BCA-205 : Operating Systems with Linux

Upon completion of this course, students will be able to:

• Gain extensive knowledge on principles and modules of operating systems.

• Understand key mechanisms in design of operating systems modules.

• Understand process management, concurrent processes and threads, memory management, virtual memory concepts, deadlocks.
• Compare performance of processor scheduling algorithms - produce algorithmic solutions to process synchronization problems.
• Use modern operating system calls such as Linux process and practice with operating system concepts such as process management, synchronization, networked processes and file systems.

BCA-206 : Foundation Course

The subject provides the opportunity to study India Arts, Literature, Indian Freedom Struggle and conveying your idea to others.

BCA Part-III

BCA-301: Part I- Calculus & Geometry

Aim of this subject is to study fundamental theorem of calculus to evaluate definite integeral and to differentiate function defined as integrals.

Part II-Differential Equation & Fourier series

The objective of the subject is applications of Fourier series to differential equation.

Part III- Computer System Architect

Aim of this subject is to study basic organization and architecture of digital computer.

BCA-302 : Java

Upon completion of this course, students will be able to:
• Understand the concept of OOP as well as the purpose and usage principles of inheritance, polymorphism, encapsulation and method overloading.
• Identify classes, objects, members of a class and the relationships among them needed for a specific problem.
• Create Java application programs using sound OOP practices (e.g., interfaces and APIs) and proper program structuring (e.g., by using access control identifies, automatic documentation through comments, error exception handling).
• Use testing and debugging tools to automatically discover errors of Java programs as well as use versioning tools for collaborative programming/editing.
• Develop programs using the Java Collection API as well as the Java standard class library.

BCA-303 : Operating System

Upon completion of this course, students will be able to:

• Gain extensive knowledge on principles and modules of operating systems.

• Understand key mechanisms in design of operating systems modules.

• Understand process management, concurrent processes and threads, memory management, virtual memory concepts, deadlocks.

BCA-304 : Software Engineering

Upon completion of this course, students will be able to:

• Know about the software product and process.

• Know about software characteristics, components and applications, methods and tools.

• Understand the software development paradigms.

• Know about the software process and lifecycle models.

BCA-305 : Multimedia Tools And Applications

To include knowledge to develop multimedia programs.

BCA-306 :

A. Financial Management & Accountancy

The primary objective of subject is attempting to reduce the cost of finance, availability of funds, dealing with planning, organizing and controlling of financial activities.

B. Foundation Course The subject provides the opportunity to improve your vocabulary and wring skill.

SCHEME OF EXAMINATION 2019-2020

BCA PART- I

Subject Code	**Subject Paper**	**Theory Marks**		**Internal Marks**		Teaching Load per Week		
						L	T	P
		Max. (A)	Min. (B)	Max. (C)	Min. (D)			
BCA101	Discrete Mathematics	80	27	20	8	4	2	-
BCA102	Computer Fundamentals	80	27	20	8	4	2	-
BCA103	Programming in 'C' language	80	27	20	8	4	2	-
BCA104	PC Software and Multimedia	80	27	20	8	4	2	-
BCA105	Web Technology and E-Commerce	80	27	20	8	4	2	-
BCA106	Communication skills	80	27	20	8	4	2	-
BCA107	LAB I: Programming Lab in 'C'	100	50	40	16	-	-	3x2
BCA108	LAB II: PC Software Lab	100	50	40	16	-	-	2x2
BCA109	LAB III: Web Technology Lab	100	50	20	8	-	-	1x2
TOTAL		780	312	220	88			
GRAND TOTAL	(PAPER + INTERNAL)	**(A+C) 1000**		**(B+D)** 400				

- Student will have to pass individually in all theory, practical and sessional.

BCA - 101
DISCRETE MATHEMATICS

Max Marks: 80 **Min Marks: 27**

NOTE: The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed not scientific calculator.

UNIT - I

Recall of statements and logical connectives, tautologies and contradictions, logical equivalence, algebra of propositions quantifiers, existential quantifiers and universal quantifiers.

UNIT – II

Boolean algebra and its properties, algebra of propositions as an example, De Morgan's Laws, partial order relations g.l.b., l.u.b. Algebra of electric circuits and its applications. Design of simple automatic control system.

UNIT - III

Boolean functions - disjunctive and conjugative normal forms. Boolean's expansion theorem, fundamental forms. Many terminal Networks.

UNIT – IV

Arbitrary Cartesian product of sets. Equivalence relations, partition of sets, injective, surjective, bijective maps, binary operations, countable, uncountable sets.

UNIT – V

Basic Concept of Graph Theory, Sub graphs, Trees and their properties, Binary Trees, Spanning Trees, Directed Trees, Planar graphs, Euler Circuit, Hamiltonian Graph. Chromatic number.

TEXT BOOKS:

1. Boolean Algebra and its Application, J.E. Whitesitt, Courier Corporation.
2. Concepts of Modern Mathematics, P.L. Bhatnagar, Van Nostrand Reinhold Company.
3. Discrete Mathematics, Babu Ram, Pearson.
4. Graph theory and its applications, NarsinghDeo, Dover publication.
5. A TextBook of Discrete Mathematics, Swapan Kumar Sarkar, S.chand.
6. Elements of Discrete Mathematics, C.L.Liu, Tata McGraw Hill, Second Edition.

BCA - 102

COMPUTER FUNDAMENTALS

Max Marks: 80 **Min Marks: 27**

NOTE: The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed not scientific calculator.

UNIT - I Introduction to Computers

Computer system: characteristics and capabilities. Computer Hardware and Software: Block Diagram of a Computer, Different Data Processing: Data, Data Processing System, Storing Data, Processing Data. Types of Computers: Analogue, Digital, Hybrid, General and Special Purpose Computers. Generation of Computers. Computer Systems: Micros, Minis & Main-frames. Limitations of Micro Computer.**Number systems:** Decimal Number system, Binary number system, Octal & Hexadecimal number system, 1's&2's complement **Codes:** ASCII, EBCDI Codes, Gray code & BCD. **Logic Gates:** AND, OR, NOT GATES and their Truth tables, NOR, NAND & XOR gates

UNIT - II Computer Peripherals

Introduction to Input Devices: Categorizing Input Hardware, Keyboard, Direct Entry – Card Readers, Scanning Devices – O.M.R., Character Readers, Thumb Scanner, MICR, Smart Cards, Voice Input Devices, Pointing Devices – Mouse, Light Pen, Touch Screen. **Computer Output:** Output Fundamentals, Hardcopy Output Devices, Impact Printers, Non-Impact Printers, Plotters, Computer output Microfilm/Microfiche (COM) systems, Softcopy Output Devices, Cathode Ray Tube, Flat Screen Technologies, Projectors, Speakers.

UNIT - III Basic Components & Storage

Central Processing Unit: The Microprocessor, control unit, A.L.U., Registers, Buses, Main Memory, Main Memory (RAM) for microcomputers, Read Only Memory(ROM). **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 and limitations, Direct access Storage and Microcomputers - Hard Disks, Disk Cartridges, Direct Access Storage Devices for large Computer systems, Mass storage systems and Optical Disks, CD ROM.

UNIT - IV Computer Software & Languages

System Software: System software Vs. Application Software, Types of System Software, Introduction and Types of Operating Systems. Boot Loader, Diagnostic Programs, BIOS, Utility Programs. **Application Software:** Microcomputer Software, Interacting with the System, Trends in PC software, Types of Application Software, Difference between Program and Packages. **Computer Languages:** Definition, Generations of computer languages, Types of Languages, Language Processors: Assembler, Interpreter, Compiler, Linker and Loader. Programming constructs, Algorithm & flowchart.

UNIT - V Introduction to MS DOS & Windows

Introduction to DOS: History and versions of DOS. Fundamentals of DOS: Physical Structure of the Disk, Compatibility of drives, Disks & DOS versions, Preparing Disks for use, Device Names. Getting Started with DOS: Booting Process (DOS, Windows, Unix), System Files and Command.com, Internal DOS Files & Directories, Elementary External DOS Commands, Creating a Batch Files, Additional Commands.

Microsoft Windows: Operating system-Definition &functions, basics of Windows. Basic components of windows, icons, types of icons, taskbar, activating windows, using desktop, title bar, running applications, exploring computer, managing files and folders, copying and moving files and folders. Control panel–display properties, adding and removing software and hardware, setting date and time, screen saver and appearance. Using windows accessories.

TEXT BOOKS:

1. Computer Fundamentals, P. K. Sinha, BPB Publications, Sixth Edition.
2. Introduction to Information Technology, V. Rajaraman, PHI, Second Edition.
3. Fundamental of Information Technology, ChetanShrivastava, Kalyani Publishers.
4. Computers Today, Suresh K Basandra, Galgotia Publications.

SCHEME OF EXAMINATION 2019-2020

BCA PART- II

Subject Code	**Subject Paper**	**Theory Marks**		**Internal Marks**		Teaching Load per Week		
						L	T	P
		Max. (A)	Min. (B)	Max. (C)	Min. (D)			
BCA201	Calculus and Differential Equations	80	27	20	8	4	2	-
BCA202	Database Management System	80	27	20	8	4	2	-
BCA203	Programming in 'C++`	80	27	20	8	4	2	-
BCA204	Computer Networks	80	27	20	8	4	2	-
BCA205	Operating Systems with Linux	80	27	20	8	4	2	-
BCA206	Foundation Course	80	27	20	8	4	2	-
BCA207	LAB IV: Programming Lab in 'C++'	100	50	40	16	-	-	3x2
BCA208	LAB V: Database Management System Lab	100	50	40	16	-	-	2x2
BCA209	LAB VI: Operating System Lab	100	50	20	8	-	-	1x2
TOTAL		780	312	220	88			
GRAND TOTAL	(PAPER + INTERNAL)	**(A+C) 1000**		**(B+D)** 400				

- Student will have to pass individually in all theory, practical and sessional.

Calculus and Differential Equations
Subject Code - BCA-201

Max Marks : 80 **Min Marks : 27**

Note : The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculators allowed not scientific calculator.

Differentiation

UNIT- I

Limits -Definition of limits, Continuity of one variable, Types of continuity, Properties of continuous function: Borel's Theorem, Boundedness Theorem, Mostest Theorem, Intermediate value theorem, Differentiability of function(s) of one variable

UNIT – II

Differentiation of Functions, Differentiation of functions of functions, parametric functions, product of functions, function in Product and quotient form, Logarithmic differentiation, Differentiation of Parametric functions. Higher order derivative, Maxima and Minima

Integration

UNIT – III

Indefinite Integral- Basic integration Formulas, Trigonometric Integrals, Integration by Parts, Integration by substitution

UNIT – IV

Definite Integrals- Introduction, Properties of definite integrals, Problem based on properties of definite integrals

Differential Equation

UNIT –V

Introduction to differential equation: Definition, order and degree of differential equation, derivation of a differential equation, general and particular solution of differential equation, separation of variables.

TEXTBOOK:

- Calculus and Statistical Analysis: H.K. Pathak
- Calculus : B.R. Thakur
- Differential Equation: H.K.Pathak

REFERENCE:

1. Differential Calculus : Gorakh Prasad
2. Differentiation & Integration : H.K Pathak
3. Integral Calculus: Gorakh Prasad
4. Differential Equation : Gorakh Prasad
5. Calculus:Rey & Sharma

Database Management System
Subject Code - BCA-202

Max Marks : 80 **Min Marks : 27**

Note : The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculators allowed not scientific calculator.

UNIT - I: Overview of Database Management

Data, Information and knowledge, Increasing use of data as a corporate resource, data processing verses data management, file oriented approach verses database oriented approach to data management; data independence, database administration roles, DBMS architecture, different kinds of DBMS users, importance of data dictionary, contents of data dictionary, types of database languages. Data models: network, hierarchical, relational.

UNIT - II: Relational Model & Relational Algebra

Entity-Relationship model as a tool for conceptual design-entities, attributes and relationships. ER diagrams; Concept of keys; Case studies of ER modeling Generalization; specialization and aggregation. Converting an ER model into relational schema. Extended ER features, Introduction to UML, Representation in UML diagram (Class Diagram etc.).

UNIT - III: Relational Database Design

Relational Algebra: select, project, cross product different types of joins (inner join, outer joins, self-join); set operations, Tuple relational calculus, Domain relational calculus, Simple and complex queries using relational algebra, stand alone and embedded query languages.

UNIT - IV: Structured Query Language (SQL)

Normalization concept in logical model; Pitfalls in database design, update anomalies: Functional dependencies, Join dependencies, Normal forms (1NF, 2NF, 3NF). Boyce Codd Normal form, Decomposition, Multi-Valued Dependencies, 4NF, 5NF.De-normalization.

UNIT - V: Query Processing and Security

Introduction to SQL constructs (SELECT…FROM, WHERE… GROUP BY… HAVING… ORDERBY….), INSERT, DELETE, UPDATE, DROP, VIEW definition and use, Temporary tables, Nested queries, and correlated nested queries, Integrity constraints: Not null, unique, check, primary key, foreign key, references, Inner and Outer Joins. **Query Processing:** Parsing, translation, optimization, evaluation and overview of Query Processing. **Protecting the Data Base:** Integrity, Security and Recovery. Domain Constraints, Referential Integrity, Assertion, Triggers, Security & Authorization in SQL.

BOOKS RECOMMENDED:

1. **Database System Concept**: *A. Silberschatz , H.F. Korth and S. Sudarshan*, TMH
2. **Fundamentals of Database Systems**: *Elmasri&Nawathe*, Pearson Education
3. **An Introduction to Database Systems**: *C. J. Date*, AWL Publishing Company
4. **SQL, PL/SQL**: *Ivan Bayross,* BPB Publication
5. **An Introduction to database systems**: *Bipin Desai*, Galgotia Publication.
6. **Database Management System**: *A. K. Majumdar& P. Bhattacharya*, TMH

Programming in "C++''
Subject Code - BCA-203

Max Marks : 80 **Min Marks : 27**

Note : The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculators allowed not scientific calculator.

UNIT - I: Language Fundamental
Overview of OOP: The Object Oriented paradigm, Basic concepts of OOP, Benefits of OOP, Object oriented languages, Application of OOP
Overview of C++: History of C++, **Data Types:** Built-in data types, User-defined data types, Derived data types. **Constants and Variables:** symbolic constants, Dynamic initialization of variable, Reference variable. Operators in C++.**Control Structures:** if-else, nested if-else, while, do-while, for, break, continue, switch, goto statement.

UNIT - II: Structure & Function
Structures*:* A Simple structure, defining a structure variable, Accessing structure's member, Enumeration data type.
Function*:* Function Declaration, Calling Function, Function Definition,**Passing Arguments to function*:*** Passing Constant, Passing Value, Reference Argument, Structure as argument, Default Argument.
Returning values from function*:*return statement, Returning structure variable, Return by reference. Overloaded Function, Inline Function.

UNIT - III: Object Classes and Inheritance
Object and Class, Defining the class and its member, Making an outside function inline, nesting of member function, array as class member, structure and classes.
Memory allocation: memory allocation for objects, new and delete operator, static data member, static member functions, object as function argument**.**
Constructor & Destructor: Null and default constructor. Parameterized constructor, Constructor with default argument, copy constructor, class destructors,

UNIT - IV: Pointers and Inheritance
Pointers: Introduction, & and * operator, pointer to object, this pointer, pointer to derived class**.**
Inheritance: Introduction to inheritance, Types of inheritance, function overriding, Constructor in Derived class.
Access specifiers: public, private, protected.

UNIT - V: Polymorphism
Dynamic polymorphism: Virtual function, Pure Virtual Function, Abstract class.
Static Polymorphism: Operator keyword,overloading unary operators (++ (pre increment and post increment), --) using operator function, overloading binary operators (+, -, ==, >=, <=, +=, <, >, []), Friend function, Friend class, overloading binary operators using friend function.

RECOMMENDED BOOKS :

1. **Object Oriented Programming with C++** : *E. Balagurusamy*, The McGraw-Hill
2. **Let Us C++**: *YesvantKanetkar*, BPB Publications
3. **The C++ Programming Language**: *BjarneStroustrup*, AddisionWasley.
4. **Object Oriented Programming in C++** :*Robert Lafore*, Galgotia Publications.

Computer Networks
Subject Code - BCA-204

Max Marks : 80 **Min Marks : 27**

Note : The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculators allowed not scientific calculator.

UNIT - I -Introduction to Computer Networking
Data Communication, Networks - Distributed Processing, Network Criteria, Applications; Protocols and Standards, Standard Organization, Line Configuration - Point to Point, Multi Point; Topology - Mesh, Star, Tree, Bus, Ring, Hybrid; Transmission mode, Categories of Network - LAN, MAN, WAN, Inter Networks.

UNIT - II -Transmission of Digital Data
Analog and Digital, digital data transmission - parallel transmission, serial transmission, DTE-DCE interface - data terminal equipment, data circuit terminating equipment, standards, modems- Transmission rate, Modem standards.

UNIT – III- The OSI Model
ISO organization, The model - Layered architecture, functions of the layers -Physical layer, Data Link layer, Network layer, Transport layer, session layer, Presentation layer, Application layer

UNIT - IV TCP/IP Model & Protocols
The TCP/IP reference model, comparison of TCP/IP & OSI, Introduction to Internet - ARPANET, Architecture of Internet, Client server model, www, IP Address Classes, Protocols: IP, HTTP, TCP, FTP, ARP.

UNIT – V Network Security
Introduction of Network Security and it's importance. Cryptography: **Definitions,** Symmetric Key Cryptography: **Traditional Ciphers, Simple modern Ciphers,** Asymmetric Key Cryptography: **RSA, Security Services, Digital Signatures.**

BOOKS RECOMMENDED:
1. Introduction to Data communication & Networking - Behrouz&Forouzan
2. Computer Networking - Andres &Tanenbaum

Operating Systems with Linux
Subject Code - BCA-205

Max. Marks: 80 **Min Marks : 27**

Note : The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculators allowed not scientific calculator.

UNIT - I: Introduction
Defining operating system, History and Evolution of operating system, **Basic Concepts**: batch processing, spooling, multiprogramming, multiprocessor system, time sharing, real time systems, Functions and Goals of operating system.

UNIT - II: Process Management
Process concept, Process Control Block, **Process State**: State Transition Diagram, **Scheduling Queues**: Queuing Diagram, Types of schedulers-context switching and dispatcher, various types of CPU scheduling algorithms and their evaluation, multilevel queues and multilevel feedback queues.

UNIT - III: Memory Management
Preliminaries of memory management, Contiguous memory allocation, fragmentation, partition allocation policies, compaction, Non-Contiguous memory allocation, Paging, Segmentation, **Virtual Memory**: Demand paging, Swapping, **Page replacement policies**: FIFO, Optimal, LRU, MRU.

UNIT - IV: Introduction to UNIX
Introduction to Multi-user System, Emergency and history of Unix, Feature and benefits, Versions of Unix.
System Structure:-Hardware requirements, Kernel and its function, introduction to System calls and Shell.
File System : Feature of Unix File System, Concept of i-node table, links, commonly used commands like who, pwd, cd, mkdir, rm, ls, mv, lp, chmod, cp, grep, sed, awk, pr, lex, yacc, make, etc. Getting started (login / logout)**.Vi Editor:-**Intro to text processing, command and edit mode, invoking vi, command structure, deleting and inserting line, deleting and replacing character, searching strings.

UNIT – V: Shell Programming
Introduction to shell feature, wild card characters, i/out redirections, standard error redirection, system and user created shell variables, profile files, pipes/tee, background processing, command line arguments, command substitution, read statement, conditional execution of commands, special shell variables $ #, #?, $* etc. Shift commands, loops and decision making- for, while and until, choice making using case…esac, decision making if ….fi, using test, string comparison, numerical comparison, logical operation, using expr.

BOOKS RECOMMENDED:
1. Operating System Concepts, Abraham Silberschatz, Peter B. Galvin and Greg Gagne (Wiley India Edition)
2. Modern Operating System, Andrew .S. Tanenbaum, (PHI)
3. UNIX Complete Reference

Foundation Course
Subject Code - BCA - 206

Max. Marks: 80 **Min Marks : 27**

Note : The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculators allowed not scientific calculator.

OBJECTIVE

This course is designed to make the students acquainted with Indian History and Culture. To make students aware of their fundamental rights & duties and to have the knowledge of parliamentary form of Government.To groom students and develop their professional skills.

Unit I

Indian Art, meaning of art, features of Indian art, elementary knowledge of paintings, music,dancing, sculpture archeology, iconography & other social arts.

Unit II

Indian Literature, Ancient Indian Literature, Elementary knowledge of Vedic Literature, Mahabharta, Ramayan and other main granthas.

Unit III

Indian Freedom Struggle : Freedom Struggle of 1857, National Consciousness, non-cooperation movements. Civil disobedient movement quit India movement, contribution of revolutionaries in freedom struggle.

Unit IV

Indian Constitution : Introduction, main features of constitution, fundamental rights.

Parliamentary Government: Meaning, Features, RajyaSabha, LokSabha.

Unit V

Communication: Process, Channels, Barriers.

Listening: Types, Purpose, Barriers, Effective Listening Strategies.

Job Interviews: Résumé Writing, Group Discussion, Job Application Writing, Interview Preparation.

BOOKS RECOMENDED:

- Indian Culture the book sponsored by M.P. Hindi granthAcademy .
- Parliamentary Procedure in India by A.R.Mukherjea
- Effective Technical Communication by M Ashraf Rizvi

PRACTICAL WORK BCA II
BCA-207 - LAB IV: Programming Lab in 'C++'

1 Scheme of Examination:-

Practical examination will be of 3 hours duration. The distribution of practical marks will be as follows

Program 1	-	20
Program 2	-	20
Program 3	-	20
Viva	-	25
[Practical Copy + Internal Record]	-	15
Total	-	**100**

2 In every program there should be comment for each coded line or block of code

3 Practical file should contain printed programs with name of author, date, path of program, unit no. and printed output.

4 All the following programs or a similar type of programs should be prepared

List of Practical

LOOPS, DECISIONS, NESTED METHOD, MEMBER FUNCTION DEFINED OUTSIDE CLASS BODY:

1. Write program to generate following pattern

a)
```
A B C D E F G
A B C   E F G
A B       F G
A           G
```

c)
```
    *
  *   *
* * *
```

2. b)
```
1
1 2
1 2 3
1 2 3 4
```

d)
```
1
1 2 1
1 3 3 1
1 4 6 4 1
```

3. Write member functions which when called asks pattern type; if user enters 11 then a member function is called which generates first pattern using for loop. If user enters 12 then a member function is called which generates first pattern using while loop. If user enters 13 then a member function is called which generates first pattern using do-while loop. If user enters 21 then a member function is called which generates second pattern using for loop and so on.
4. Write program to display number 1 to 10 in octal, decimal and hexa-decimal system.
5. Write program to display number from one number system to another number system. The program must ask for the number system in which you will input integer value then the program must ask the number system in which you will want, output of the input number after that you have to input the number in specified number system and program will give the output according to number system for output you mentioned earlier.

Array

1. Write a program using function to add, subtract and multiply two matrices of order 3x3. You have to create one function for addition, which accepts three array arguments. First two array arguments are matrices to add and third matrix is destination where the resultant of addition of first two matrixes is stored. In similar way create functions for matrix subtraction and multiplication.
2. Create a single program to perform following tasks without using library functions:
    a. To reverse the string accepted as argument.
    b. To count the number of characters in string passed as argument in form of character array.
    c. To copy the one string to other string; passed as arguments in form of source character array and destination character array without using library function.

a) To count no. of vowels, consonants in each word of a sentence passed as argument in form of character array.

Class, Object, Array of object, Object Using Array

1. Create a class Student having data members to store roll number, name of student, name of three subjects, max marks, min marks, obtained marks. Declare an object of class student. Provide facilities to input data in data members and display result of student.
2. Create a class Student having data members to store roll number, name of student, name of three subjects, max marks, min marks, obtained marks. Declare array of object to hold data of 3 students. Provide facilities to display result of all students. Provide also facility to display result of specific student whose roll number is given.
3. Create a class Sarray having an array of integers having 5 elements as data member provide following facilities:
    a. Constructor to get number in array elements. b) Sort the elements. c) Find largest element
    b. Search for presence of particular value in array element.

Static member function

1. Create a class Simple with static member functions for following tasks:
    a. To find factorial by recursive member function.
    b. To check whether a no. is prime or not.
    c. To generate Fibonacci series up to requested terms.

Object as argument to function, function returning object

1. Write program-using class having class name Darray. Darray has pointer to pointer to integer as data member to implement double dimension dynamic array and provide following facilities:
    a. Constructor to input values in array elements.
    b. Input member function to get input in array element
    c. Output member function to print element value
    d. Add member function to perform matrix addition using objects.
    e. Subtract member function to perform matrix subtraction using objects.
    f. Multiply member function to perform matrix multiplication using objects
2. Write program to create class complex having data members to store real and imaginary part. Provide following facilities:

a) Add two complex no. using objects. b) Subtract two complexes no. using objects.
c) Multiply two complexes no. using objects. d) Divide two complex no. using objects.

Friend Function

1. Create class Polar having data members radius and angle. It contains member functions for taking input in data members and member function for displaying value of data members. Class Polar contains declaration of friend function add which accepts two objects of class Polar and returns object of class Polar after addition. Test the class using main function and objects of class Polar.

2. Write program to create class distance having data members feet and inch (A single object will store distance in form such as 5 feet 3 inch). It contains member functions for taking input in data members and member function for displaying value of data members. Class Distance contains declaration of friend function add which accepts two objects of class Distance and returns object of class Distance after addition. Class Distance contains declaration of another friend function Subtract that accepts two objects of class Distance and returns object of class Distance after subtraction. Test the class using main function and objects of class Distance.

3. Write a program to create class Mother having data member to store salary of Mother, create another class Father having data member to store salary of Father. Write a friend function, which accepts objects of class Mother, and Father and prints Sum of Salary of Mother and Father objects.

Friend Class

4. Write a program to create class Mother having data member to store salary of Mother, create another class Father having data member to store salary of Father. Declare class Father to be friend class of Mother. Write a member function in Father, which accepts object of class Mother and prints Sum of Salary of Mother and Father Objects. Create member function in each class to get input in data member and to display the value of data member.

Static Data Member

5. Create a class Counter having a static data member, which keeps track of no. of objects created of type Counter. One static member function must be created to increase value of static data member as the object is created. One static member function must be created to decrease value of static data member as the

object is destroyed. One static member function must be created to display the current value of static data member. Use main function to test the class Counter.

STRUCTURE AND CLASS

6. Define structure student. Structure student has data members for storing name, rollno, name of three subjects and marks. Write member function to store and print data.

COPY CONSTRUCTOR, CONSTRUCTOR OVERLOADING, THIS POINTER, CONSTRUCTOR WITH DEFAULT ARGUMENT.

7. Write program to create a class Polar which has data member radius and angle, define overloaded constructor to initialize object and copy constructor to initialize one object by another existing object keep name of parameter of parameterized constructor same as data members. Test function of the program in main function.

Write program to create a class Polar which has data member radius and angle, use constructor with default arguments to avoid constructor overloading and copy constructor to initialize one object by another existing object keep name of parameter of parameterized constructor same as data members. Test functioning of the program in main function

FUNCTION OVERLOAD, REFERENCE VARIABLE, PARAMETER PASSING BY ADDRESS, STATIC FUNCTION

21. Write a class having name Calculate that uses static overloaded function to calculate area of circle, area of rectangle and area of triangle.
22. Write a class ArraySort that uses static overloaded function to sort an array of floats, an array of integers.
23. Write a program using class, which uses static overloaded function to swap two integers, two floats methods use reference variable.
24. Write a program using class, which uses static overloaded function to swap two integers; two floats methods use parameter passing by address.

STRING, POINTER, AND OPERATOR OVERLOADING

Create class String having pointer to character as data member and provide following Facilities:

a) Constructor for initialization and memory allocation.
b) Destructor for memory release.
c) Overloaded operators + to add two string object.
d) Overloaded operator = to assign one string object to other string object.
e) Overloaded operator = = to compare whether the two string objects are equal or not.
f) Overloaded operator < to compare whether first-string object is less than second-string object.
g) Overloaded operator > to compare whether first-string object is greater than second-string object or not.
h) Overloaded operator <= to compare whether first string object is less than or equal to second string object or not
i) Overloaded operator >= to compare whether first string object is greater than or equal to second string object.
j) Overloaded operator != to compare whether first string object is not equal to second string object or not.
k) Overloaded insertion and extraction operators for input in data member and display out put of data members.

8. Create a class Matrix having data member double dimension array of floats of size 3x3. Provide following facilities:

a) Overloaded extraction operator for data input.
b) Overloaded insertion operator for data output.
c) Overloaded operator + for adding two matrix using objects.
d) Overloaded operator – for subtracting two using matrix objects.
e) Overloaded operator * for multiplying two using matrix objects.

OPERATOR OVERLOADING WITH FRIEND FUNCTION

9. Create a class Polar having radius and angle as data members. Provide following facilities:

a) Overloaded insertion and extraction operators for data input and display.
b) Overloaded constructor for initialization of data members.
c) Overloaded operator + to add two polar co-ordinates using objects of class Polar.

10. Create class DegreeCelsius having a single data member to hold value of temperature in degree Celsius. Provide following facilities:

a) Overloaded operator ++ which will increase value of data member by 1 (consider postfix and prefix operator overloading).

b) Overloaded operator -- which will decrease value of data member by 1 (consider postfix and prefix operator overloading).

c) Overloaded insertion and extraction operators for input in data member and display value of data member.

OPERATOR OVERLOADING AND DATA TYPE CONVERSION

11. Create a class Polar that contains data member radius and angle. Create another class Cartesian in the same program and provide following facilities:

a) It should be possible to assign object of polar class to object of Cartesian class.

b) It should be possible to assign object of Cartesian class to object of polar class.

12. Create a class Fahrenheit that contains a data member to hold temperature in Fahrenheit. Create another class Celsius that contains a data member to hold temperature in Degree Celsius; in the same program and provide following facilities:

a) It should be possible to assign object of Fahrenheit class to object of Celsius class.

b) It should be possible to assign object of Celsius class to object of Fahrenheit class.

c) It should be possible to compare objects of class Fahrenheit and Celsius to find out which object contains higher temperature.

VOID POINTER, POINTER AND POINTER TO OBJECT

13. Create a program having pointer to void to store address of integer variable then print value of integer variable using pointer to void. Perform the same operation for float variable.

14. Write program to find biggest number among three numbers using pointer and function.

15. Write swapping program to demonstrate call by value, call by address and call by reference in a single program.

16. Write program to Create a class Employee having data members to store name of employee, employee id, salary. Provide member function for data input, output. Use Pointer to object to simulate array of object to store information of 3 employees and test the program in function main.

INLINE FUNCTION.

17. Write a program using inline function to calculate area of circle.

18. Write a program using inline function to find minimum of two functions. The inline function should take two arguments and should return the minimum value.

INHERITANCE

19. Create a class account that stores customer name, account number and type of account. From this derive the classescur_acct and sav_acct to make them more specific to their requirements. Include necessary member functions in order to achieve the following tasks:

a) Accept deposit from customer.

b) Display the balance

c) Computer and deposit interest.

d) Permit withdrawal and update the balance.

e) Check for the minimum balance, impose penalty, necessary and update the balance.

20. Create a class circle with data member radius; provide member function to calculate area. Derive a class sphere from class circle; provide member function to calculate volume. Derive class cylinder from class sphere with additional data member for height and member function to calculate volume.

21. Consider an example of declaring the examination result. Design three classes:- student, exam and result. The student class has data members such as that representing roll number, name of student. Create the class exam, which contains data members representing name of subject, minimum marks, maximum marks, obtained marks for three subjects. Derive class result from both student and exam classes. Test the result class in main function.

VIRTUAL AND PURE VIRTUAL FUNCTION

22. Create a base class shape having two data members with two-member function getdata (pure virtual function) and printarea (not pure virtual function). Derive classes triangle and rectangle from class shape

and redefine member function printarea in both classes triangle and rectangle and test the functioning of classes using pointer to base class objects and normal objects.

PRACTICAL WORK
BCA-208 - LAB V: Database Management System Lab

1 Scheme of Examination:-

Practical examination will be of 3 hours duration. The distribution of practical marks will be as follows

Program 1 (Oracle)	-	20
Program 2 (Oracle)	-	20
Program 3 (Oracle)	-	20
Viva	-	25
[Practical Copy + Practical Sessional]	-	15
Total	-	**100**

2 In every program there should be comment for each coded line or block of code

3 practical files should contain printed programs with name of author, date, path of program, unit no. and printed output.

4 All the following programs or a similar type of programs should be prepared

List of Practical

1. Using the following database,

Colleges (cname, city, address, phone, afdate)
Staffs (sid, sname, saddress, contacts)
StaffJoins(sid, cname, dept, DOJ, post, salary)
Teachings (sid, class, paperid, fsession, tsession)
Subjects (paperid, subject, paperno, papername)

Write SQL statements for the following –

a. Create the above tables with the given specifications and constraints.
b. Insert about 10 rows as are appropriate to solve the following queries.
c. List the names of the teachers teaching computer subjects.
d. List the names and cities of all staff working in your college.
e. List the names and cities of all staff working in your college who earn more than 15,000
f. Find the staffs whose names start with 'M' or 'R' and ends with 'A' and/or 7 characters long.
g. Find the staffs whose date of joining is 2005.
h. Modify the database so that staff N1 now works in C2 College.
i. List the names of subjects, which T1 teaches in this session or all sessions.
j. Find the classes that T1 do not teach at present session.

a. Find the colleges who have most number of staffs.
b. Find the staffs that earn a higher salary who earn greater than average salary of their college.
c. Find the colleges whose average salary is more than average salary of C2
d. Find the college that has the smallest payroll.
e. Find the colleges where the total salary is greater than the average salary of all colleges.
f. List maximum, average, minimum salary of each college

a. List the names of the teachers, departments teaching in more than one department.
b. Acquire details of staffs by name in a college or each college.
c. Find the names of staff that earn more than each staff of C2 College.
d. Give all principals a 10% rise in salary unless their salary becomes greater than 20,000 in such case give 5% rise.
e. Find all staff that do not work in same cities as the colleges they work.

f. List names of employees in ascending order according to salary who are working in your college or all colleges.
   a. Create a view having fields sname, cname, dept, DOJ, and post
   b. Create a view consisting of cname, average salary and total salary of all staff in that college.
   c. Select the colleges having highest and lowest average salary using above views.
   d. List the staff names of a department using above views.

2. Create the following database,

Enrollment (enrollno, name, gender, DOB, address, phone)
Admission (admno, enrollno, course, yearsem, date, cname)
Colleges (cname, city, address, phone, afdate)
FeeStructure (course, yearsem, fee)
Payment (billno, admno, amount, pdate, purpose)

a. Create the above tables with the given specifications and constraints.
b. Insert about 10 rows as are appropriate to solve the following queries.
c. Get full detail of all students who took admission this year class wise
d. Get detail of students who took admission in Bhilai colleges.
e. Calculate the total amount of fees collected in this session
   i) By your college ii) by each college iii) by all colleges
   a. List the students who have not payed full fee
      i) in your college ii) in all colleges
   b. List the number of admissions in your class in every year.
   c. List the students in the session who are not in the colleges in the same city as they live in.
   d. List the students in colleges in your city and also live in your city.

3. Create the following database,

Subjects (paperid, subject, paper, papername)
Test (paperid, date, time, max, min)
Score (rollno, paperid, marks, attendence)
Students (admno,rollno, class, yearsem)

   b. Create the above tables with the given specifications and constraints.
   c. Insert about 10 rows as are appropriate to solve the following queries.
   d. List the students who were present in a paper of a subject.
   e. List all roll numbers who have passed in first division.
   f. List all students in BCA-II who have scored higher than average
      i) in your college ii) in every college
   g. List the highest score, average and minimum score in BCA-II i) in your college ii) in every college

4. Using the following database

Colleges (cname, city, address, phone, afdate)
Staffs (sid, sname, saddress, contacts)
StaffJoins(sid, cname, dept, DOJ, post, salary)
Teachings (sid, class, paperid, fsession, tsession)
Subjects (paperid, subject, paperno, papername)

Write SQL statements for the following –

a. Create the above tables with the given specifications and constraints.
b. Insert about 10 rows as are appropriate to solve the following queries.
c. List the names of the teachers teaching computer subjects.
d. List the names and cities of all staff working in your college.
e. List the names and cities of all staff working in your college who earn more than 15,000

5. Using the following database

Colleges (cname, city, address, phone, afdate)
Staffs (sid, sname, saddress, contacts)
StaffJoins(sid, cname, dept, DOJ, post, salary)

Teachings (sid, class, paperid, fsession, tsession)
Subjects (paperid, subject, paperno, papername)

a. Find the staffs whose names start with 'M' or 'R' and ends with 'A' and/or 7 characters long.
b. Find the staffs whose date of joining is 2005.
c. Modify the database so that staff N1 now works in C2 college.
d. List the names of subjects which T1 teaches in this session or all sessions.

6. Using the following database
Colleges (cname, city, address, phone, afdate)
Staffs (sid, sname, saddress, contacts)
StaffJoins(sid, cname, dept, DOJ, post, salary)
Teachings (sid, class, paperid, fsession, tsession)
Subjects (paperid, subject, paperno, papername)

a. Find the classes that T1 do not teach at present session.
b. Find the college who have most number of staffs.
c. Find the staffs who earn a higher salary who earn greater than average salary of their college.
d. Find the colleges whose average salary is more than average salary of C2
e. Find the college that has the smallest payroll.
f. Find the colleges where the total salary is greater than the average salary of all colleges.
g. List maximum, average, minimum salary of each college

7. Using the following database
Colleges (cname, city, address, phone, afdate)
Staffs (sid, sname, saddress, contacts)
StaffJoins(sid, cname, dept, DOJ, post, salary)
Teachings (sid, class, paperid, fsession, tsession)
Subjects (paperid, subject, paperno, papername)

a. Find the classes that T1 do not teach at present session.
b. List the names of the teachers, departments teaching in more than one departments.
c. Acquire details of staffs by name in a college or each college.
d. Find the names of staff who earn more than each staff of C2 college.
e. Give all principals a 10% rise in salary unless their salary becomes greater than 20,000 in such case give 5% rise.
f. Find all staff who donot work in same cities as the colleges they work.
g. List names of employees in ascending order according to salary who are working in your college or all colleges.

8. Using the following database
Colleges (cname, city, address, phone, afdate)
Staffs (sid, sname, saddress, contacts)
StaffJoins(sid, cname, dept, DOJ, post, salary)
Teachings (sid, class, paperid, fsession, tsession)
Subjects (paperid, subject, paperno, papername)

a. Find the classes that T1 do not teach at present session.
b. Create a view having fields sname, cname, dept, DOJ, and post
c. Create a view consisting of cname, average salary and total salary of all staff in that college.
d. Select the colleges having highest and lowest average salary using above views.
e. List the staff names of a department using above views.

9. Enrollment (enrollno, name, gender, DOB, address, phone)
Admission (admno, enrollno, course, yearsem, date, cname)
Colleges (cname, city, address, phone, afdate)

FeeStructure (course, yearsem, fee)
Payment (billno, admno, amount, pdate, purpose)

a. Create the above tables with the given specifications and constraints.
b. Insert about 10 rows as are appropriate to solve the following queries.
c. Get full detail of all students who took admission this year classwise
d. Get detail of students who took admission in Bhilai colleges.
e. Calculate the total amount of fees collected in this session
   i) by your college ii) by each college iii) by all colleges

10. Enrollment (enrollno, name, gender, DOB, address, phone)
Admission (admno, enrollno, course, yearsem, date, cname)
Colleges (cname, city, address, phone, afdate)
FeeStructure (course, yearsem, fee)
Payment (billno, admno, amount, pdate, purpose)

a. List the students who have not payed full fee i) in your college ii) in all colleges
b. List the number of admissions in your class in every year.
c. List the students in the session who are not in the colleges in the same city as they live in.
d. List the students in colleges in your city and also live in your city.

11. Subjects (paperid, subject, paper, papername)
Test (paperid, date, time, max, min)
Score (rollno, paperid, marks, attendence)
Students (admno,rollno, class, yearsem)

a. Create the above tables with the given specifications and constraints.
b. Insert about 10 rows as are appropriate to solve the following queries.
c. List the students who were present in a paper of a subject.
d. List all roll numbers who have passed in first division.
e. List all students in BCA-II who have scored higher than average
   i) in your college ii) in every college
f. List the highest score, average and minimum score in BCA-II i) in your college ii) in every college

PRACTICAL WORK
BCA-209-LAB VI: Operating System Lab

Scheme of Examination:-

1. Practical examination will be of 3 hours duration. The distribution of practical marks will be as follows

Program 1	-	20
Program 2	-	20
Program 3	-	20
Viva	-	25
[Practical Copy + Internal Record]	-	15
Total	-	**100**

2. In every program there should be comment for each coded line or block of code
3. Practical file should contain printed programs with name of author, date, path of program, unit no. and printed output.
4. All the following programs or a similar type of programs should be prepared

List of Practical

1. Change your shell environment – path, home, ifs, mail, ps1, ps2, term, login name
   a. at command line
   b. at shell level
   c. at login level
   d. Change the wallpaper, screensaver in GNOME, KDE
2. Install Linux with following specifications – user name, password, partitions for various directories such as /etc, /home, etc
   a. Add a user and password, change the password
   b. Add & remove a group
   c. Create partitions on your disk.
   d. Install and configure (i) printer (ii) scanner

Using vi editor do the following exercises

1. In a file
   i) replace the words 'has' with 'has not '.
   ii) Locate n^{th} character
   iii) Sort lines 21 to 40
2. In a file copy/cut and paste following text-
   i At i^{th} line, n lines to j^{th} line .
   ii Yank a few words
   iii Cut and paste n words to i^{th} position in l^{th} line
2. Open two files 'txtfile' and 'newfile' and copy/cut 5 lines from txtfile and paste them in newfile using vi editor.
3. Open 'txtfile' and copy/cut following and paste to the 'newfile'
   i i^{th} to the last line in it
5. Create macro
   ii to paste your name at any position in the file.
   iii to map the 1^{st} function key to search for "loop" and copy into the buffer 'a' all text following it up to but not including the string "end".
   iv to remove all leading spaces in a file
   v to save and quit vi editor in input mode

Write commands

i. List all files that match a class.
ii. List all files that do not match a class.
iii. Change the file permissions
iv. Configure or set characteristics of your terminal. Describe any 3.
v. Display the lines in a file that contain a particular word.
vi. Append the contents of two files in a file JABC.
vii. Count the number of files in a directory.

Write shell programs

i. Display all the users currently logged in detail with column headers.
ii. List all files in current directory and save the list in a file ABC. Also save the contents of the files in ABC and display the contents in ABC in sorted order.
iii. Sort the contents of a file ABC and save it in OABC.
iv. Display all the users currently logged in detail with column headers.
v. To save current date & time, number of files & directories in the current directory and contents of all the files to a single file NFL.
vi. To input a number and test whether it is +ve, -ve or zero.
vii. To test whether a filename is a regular file or a directory or of other type.
viii. To list only the directories in current path.
ix. To print the greatest of three numbers.
x. To print 12 terms of Fibonacci series.
xi. To display all users currently logged in & also check a particular user every 30 seconds until he logs in.
xii. To save current date & time, number of files in the current directory and contents of all the files matching a pattern to a single file NPFL.
xiii. To display particular messages depending on the weekday.
xiv. To display common messages for following group of days-Monday & Wednesday, Tuesday & Thursday and Friday & Saturday and other day.
xv. To accept a string from the terminal and echo a suitable message if it doesn't have at least 9 characters.
xvi. Write a Shell Script to find the factorial of a number.
xvii. Write a Shell Script to swap two numbers using third variable.
xviii. Write a Shell Script to print prime numbers between 1 to 20.
xix. Write a Shell Script to greatest of three numbers.
xx. Write a Shell Script to sort the contents of a file XYZ and save it in BCAII
xxi. Write a Shell Script to display mathematical table of any number in the format E x :-3*1=3.

BCA - 103

PROGRAMMING IN 'C' LANGUAGE

Max Marks: 80 **Min Marks: 27**

NOTE: The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed not scientific calculator.

UNIT-I

Fundamentals of C Programming: Overview of C: History of 'C', Structure of 'C' program. Keywords, Tokens, Data types, Constants, Literals and Variables, Operators and Expressions: Arithmetic operators, Relational operator, Logical operators, Expressions, Operator: operator precedence and associatively, Type casting, Console I/O formatting, Unformatted I/O functions: getch(), getchar, getche(), getc(), putc(), putchar().

UNIT- II

Control Constructs: If-else, conditional operators, switch and break, nested conditional branching statements, loops: do while, while, for, Nested loops, break and continue, goto and label, exit function.

Functions: Definition, function components: Function arguments, return value, function call statement, function prototype, Types of function, Scope and lifetime of variable, Call by value and call by reference. Function using arrays, function with command line argument. User defined function: maths and character functions, Recursive function.

UNIT-III

Array: Array declaration, One and Two dimensional numeric and character arrays, Multidimensional arrays.

String: String declaration, initialization, string manipulation with/without using library function.

Structure, Union and Enum - Structure: Basics, declaring structure and structure variable, typedef statement, array of structure, array within structure, Nested structure; passing structure to function, function returning structure. **Union**: basics, declaring union and union variable, **Enum**: declaring enum and enum variable.

UNIT- IV

Pointer: Definition of pointer, Pointer declaration, Using & and * operators. Void pointer, Pointer to pointer, Pointer in math expression, Pointer arithmetic, Pointer comparison, Dynamic memory allocation functions – malloc, calloc, realloc and free, Pointer vs. Array, Array of pointer, Pointer to array, Pointers to function, Function returning pointer, Passing function as Argument to function, Pointer to structure, Dynamic array of structure through pointer to structure.

UNIT-V

File Handling and Miscellaneous Features: File handling: file pointer, File accessing functions: fopen, fclose, fputc, fgetc, fprintf, fscanf, fread, fwrite,beof, fflush, rewind, fseek, ferror. File handling through command line argument. Introduction to C preprocessor #include, #define, Conditional compilation directives: #if, #else, #elif, #endif, #ifndef etc.

TEXT BOOKS:

1. Programming in ANSI C, E Balagurusamy, Tata McGraw-Hill, Third Edition.
2. Let Us C, YashwantKanetkar, Infinity Science Press, Eighth Edition.
3. Mastering C, K R Venugopal,Tata McGraw-Hill.
4. The C Programming Language, Brian W. Kernighan, Dennis M. Ritchie, Prentice Hall, 2nd Edition.
5.Applications Programming in ANSI C, R. Johnsonbaugh , Martin Kalin, Macmillan, 2nd Edition.
6. The Spirit of C, Mullish Cooper, Jaico publishing House.
7. How to solve it by Computer, R.G.Dromey, Pearson Education.

BCA - 104

PC SOFTWARE AND MULTIMEDIA

Max Marks: 80 **Min Marks: 27**

NOTE: The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed not scientific calculator.

UNIT - I Using Office with MS-Word

Introduction to word processing software and it's features, Creating new document, Saving documents, Opening and printing documents. **Home Tab:** Setting fonts, Paragraph settings, Various styles (Normal, No spacing, Heading1, Heading2, Title, Strong), Find & replace, Format painter, Copy paste and paste special. **Insert Tab:** Pages, Tables, pictures, clipart, shapes, header & footer, word art, equation and symbols. **Page Layout Tab:** Page setup, page Background, Paragraph (indent and spacing). **Mailing Tab:** Create envelops and Labels, Mail merge. **Review Tab:** Spelling and grammar check, New comment, Protect document, **View Tab:** Document views, Zoom, Window (New window, Split, Switch window).

UNIT – II Working with MS-Excel

Introducing Excel, Use of excel sheet, Creating new sheet, Saving, Opening, and printing workbook. **Home Tab:** Font, Alignment, Number, Styles and cells and editing, Conditional Formatting. **Insert Tab:** Table, Charts (column chart, Pie chart, Bar chart, Line chart) and Texts (header & footer, word art, signature line). **Page Layout Tab :**Page setup options, Scale to fit(width, height, scale). **Formulas Tab :**Autosum (sum, average, min, max), logical(IF, and ,or ,not ,true, false), Math &trig (sin, cos, tan, ceiling, floor, fact, mod, log), watch window. **Data Tab :** Get external data from MS Access, Sort and filter options , Data validation, Group and ungroup. **Review Tab:** Protect sheet, Protect workbook, Share workbook. **View Tab:** Page breaks, Page layout, Freezing panes, Split and hide.

UNIT – III Working with MS-PowerPoint

Introducing power point, Use of power point presentation, Creating new slides saving, Opening and printing.**Home Tab:** New slide, Layout, Reset, Delete, Setting text direction, Align text, Convert to smart art, Drawing options. **Insert Tab:** Table, picture, clipart, photo album, smart art, shapes and chart, movie and sound, hyperlink and action, text box , word art, object. **Design Tab:** Page setup options, slide orientation, applying various themes, selecting background style and formatting it. **Animations Tab:** Custom animation for entrance, exit and emphasis, applying slide transition, setting transition speed and sound, animation on rehears timing. **Slide show &view Tab:** Start slid show options, setup options. **View tab:** Presentation views, colours and window option.

UNIT – IV Working with MS-Access

Front end and back end of application, Introduction to DBMS, Features of DBMS, Creating blank databases, Saving it in accdb format. Defining data types in ms access. **Home Tab:** Datasheet view, design vew, pivot chart view, pivot table view, sort and filter options. **Create Tab :** Creating tables, Creating reports, Query wizard. **External Data Tab :** importing data from access and excel sheet, exporting data to excel and ms word. **Datasheet Tab:** Relationships, Fields and columns options, Data type and formatting options.

UNIT – V Animations and Graphics

Basic Concept of 2D/3D Animation, Principle of animation, application of Multimedia, Hardware & software resources requirement for animation, introduction of various file formats (.mpeg, .gif, .jpeg, .mp4, .tif, .flv). **Creating a new movie in flash :**Get set Up, Input Text, Animate Text, drawing and painting with tools, brush,create basic shapes like Oval, Rectangle&Polystar Tools, tools working with object & filing the object, Transformation, object properties dialog box, creating layers motion tweeing, shape tweeing , mask layers, basic action scripts, importing sound through Flash.

TEXT BOOKS:

1. Microsoft Office 2007 fundamentals, L Story, D Walls.
2. MS Office, S. S. Shrivastava, Firewall Media.
3. Office 2000 made easy, Alan Neibauer, Tata McGraw Hill.
4. FLASHMX Bible, Robert Reinhart.
5. Sams Teach Yourself Macromedia Flash 8 in 24 Hours, Phillip Kerman.
6. How to do everything with Macromedia, Bonnie Blake, DougSahlin.

SCHEME OF EXAMINATION 2019-2020

BCA PART-III

Subject Code	Subject Paper	Theory Marks		Internal Marks		Teaching Load per Week L T P		
		Max. (A)	Min. (B)	Max. (C)	Min. (D)			
***BCA301**	Part I- Calculus & Geometry	50			-	2	-	-
	Part II-Differential Equation & Fourier Series	50	60	-	-	2	-	-
	Part III- Computer System Architect	50		-	-	2	-	-
BCA302	Java	100	40	50	30	4	2	-
BCA303	Operating System	100	40	50	30	4	2	-
BCA304	Software Engineering	100	40	50	30	4	2	-
BCA305	A. MULTIMEDIA TOOLS AND APPLICATIONS B. Practical based on course 305A	50 50	20 20	- -	- -	2	2 -	- 2x2
BCA306	A. Financial Management & Accountancy B. Foundation Course	50 50	40	- -	- -	2 2	- -	- -
BCA307	Practical Based on Course-302	100	50	-	-	-	-	3x2
BCA308	Project	100	50	-	-	-	-	1x2
TOTAL		850	360	150	90			
GRAND TOTAL	(PAPER + INTERNAL)	**(A+C) 1000**		**(B+D) 450**				

* Minimum passing marks in subject BCA301 is 40% of total marks 150(i.e. Total of Part I + Part II + Part III marks of BCA301)

BCA301
CALCULUS & GEOMETRY

Max. Marks : 50

NOTE :- The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed not Scientific calculator.

CALCULUS

UNIT - I

The Reimann Integral, Existence of the Riemann Integral, Properties of Reimann Integrals, Fundamental Theorem of Integral Calculus.

UNIT-II

Maxima and minima of functions of two and three variables. Langrange's method of undetermined multipliers.

UNIT-III

Improper integrals, Meaning of integrals of type $\int_a^{\infty} f(x)\,dx$, $\int_a^b f(x)\,dx$ where f(x) is not defined at a and/or b. Tests of convergence for improper integrals.

GEOMETRY

UNIT- IV

Equation to cone with given base, Generators of Cone, condition for three mutually perpendicular generators, Right Circular Cone, Equation of a cylinder.

UNIT-V

Polar Coordinates, Polar equation to straight line, Circle. Polar equation of a Conic.

REFERENCE:

1. Calculus of two and more variables: G.S. Pandey & V.P. Saxena (Wiley Eastern)
2. Higher calculus : P.L.Sharma
3. Vector Calculus & Geometry : B.R.Thakur.

BCA301
DIFFERENTIAL EQUATIONS & FOURIER SERIES

Max Marks : 50

Note : The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed not Scientific calculator.

UNIT –I

Concept of Differential equation. Recall of first order and first degree differential equations. Equation of first order but of higher degree. Homogeneous and exact differential equations.

UNIT-II

Geometric representation, Family of curves and orthogonal trajectories. Linear differential equation with constant coefficients. Operational rules of D. Homogeneous linear equations.

UNIT-III

Partial differential equations of first order, Standard forms, Linear partial differential equations of higher order with constant coefficients.

UNIT- IV

Periodic Function, Fourier Sine and Cosine Series, Even and Odd Functions, Full Range and Half Range Fourier Series

UNIT-V

Convergence of Fourier Series, Gibbs Phenomenon, Operations on Fourier Series, Applications of Fourier Series to Differential Equation

REFERENCE:

1.Introductory course in differential equations : D. A. Murray 2.Differential equations(Awkl Sameekaran) : B.P. Parashar & L.P. Rajpal 3.Differential equations and Fourier Series : H.K.Pathak

BCA 301
COMPUTER SYSTEM ARCHITECTURE

Max Marks : 50

Note : The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed not Scientific Calculator.

UNIT I

Data Representation – Data Types, Number System, Fixed Point Representation – 1's, 2's complements, Binary Fixed point representation, Arithmetic operation on Binary operation, Overflow & Underflow, Codes, ASCII, EBCDIC codes, Grey codes, Excess-3, BCD codes, Error detection & correcting codes.

UNIT II

Digital Logic Circuits – Logic Gates AND, OR, NOT, Gates & their truth tables, NOR, NAND & XOR Gates, Boolean algebra, Basic Boolean Law, Doorman's theorem, Map Simplification, Minimizing technique, K Map, Sum of product, Product of sums, Combinational & sequential Circuits Half adder & Full adder, Full Subtractor, Flip Flop – RS, D, JK & T Flip Flop, Shift register, RAM & ROM.

UNIT III

CPU organization, ALU & Control circuit, Idea about arithmetic circuits, Program control, Instruction sequencing, Introduction to Microprocessor, Microprocessor architecture, System buses, Registers, Program counter,, Block diagram of a Macro computer system, Microprocessor control signals, Interfacing Devices
,Introduction to Motherboard ,SMPS

UNIT IV

Input output organization, 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

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.

REFERENCE:

1. Computer System architecture - M. Moris Mano

BCA - 302
PROGRAMMING IN JAVA

Max marks-100 **Min marks – 40**

Note : The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed not Scientific calculator.

UNIT - I

Introduction : Genesis of java, importance to the Internet, overview of features.
OOP : OOP features, data types, control structures, arrays, methods and classes, nested & inner classes, string and String Buffer class, Wrapper Class, vectors,

UNIT-II

Inheritance : Basics type,, method Override, using abstract and final classes, using super.
Packages and Interfaces : Defined CLASSPATH, importing packages, implementing interface.

UNIT - III

Exception Handling : Fundamental: exception types, using try and catch, throwing exceptions, defined exceptions.
Multithreaded Programming : Java spread model, creating threads, and thread priorities, synchronization. Suspending resuming and stopping threads.

UNIT –IV

Input/Output: Basic Streams, Byte and Character Stream, predefined streams, reading and writing from console and files. Using standard Java Packages (lang,util,io)
Networking : Nasecs. TCP/IP client & server sockets, URL connection.
JDBC: Setting the JDBC connectivity with backend database.

UNIT-V

Applets : Fundamentals, life cycle, overriding update, HTML APPLET tag, passing parameters. Developing single applets.
Introduction to AWT : Window fundamentals, creating windowed, programs waking with graphics, using AWT controls, menus. Delegation event model, handling mouse and keyboard events.

BOOKS RECOMMENDED:

1. java complete reference - by Patrick naughten & Mesut Scpddt. [TMH]
2. Java Primer - by E.Balaguruswami
3. Java Programming - Khalid Mughal

BCA – 303
OPERATING SYSTEM

Max marks-100 **Min marks – 40**

Note : The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed not Scientific calculator.

UNIT-I Introduction
What is operating system, basic concept, terminology, batch processing, spooling, multiprogramming, time sharing, real time systems, protection, multiprocessor system, operating system as resource manager, process view point, memory management, process management, device management and information management, other views of operating system, historical, functional job control language and supervisor service control.

UNIT-II Processor Management (CPU Scheduling)
Reviewing of multiprogramming concept, scheduling concept, basic concept, CPU I/O burst cycle process state, PCB (Programme Control Block) scheduling queries, schedulars, scheduling algorithms - performance criteria, first-come - first served shortest job - first priority, preemptive algorithm, round robin, multilevel queues and multilevel feedback queues, algorithm evolution, multiprocessor scheduling , separate system, coordinated job scheduling, master / slave scheduling.

UNIT-III Memory Management
Preliminaries of memory management, memory handling in M/C, relocation, swapping and swap time calculation, multiple partitions, partitioned allocation MFT, fragmentation, MVT, compaction, paging, job scheduling implementation of page tables, shared page, virtual memory-overlays, concepts of virtual memory demand page, memory management and performance, page replacement and page replacement algorithms. Allocation algorithms. Storage hierarchy disk and drum scheduling - physical characteristics fcfs scheduling SCAN, short of seek time first disk scheduling algorithms sector queuing.

UNIT -IV Information Management (File System)
File concept, file type, typed based system, disk based system, general model of file system, file directory maintenance, symbolic file system, basic file system, physical file system, file support device directory, access methods free space management contiguous, linked allocation and indexed allocation performances.

UNIT V Dead Locks
The Dead Lock problem - Dead Lock definition, Dead Lock detection, detection algorithm usage, Dead Lock characterization, resource allocation graph, Dead Lock prevention, mutual exclusion, hold and wait, no preemption and circular wait, dead lock avoidance-bankers algorithm. Recovery from Dead Lock process termination, resource preemption, combined approach to Dead Lock handling.

BOOKS RECOMMENDED :

1. **1. Principles of Operating System -Peterson.**
2. **2. Operating System -Mandinick & Donovan.**

BCA (Third Year) : BCA - 304

SOFTWARE ENGINEERING

Max marks-100 Min marks – 40

NOTE :- The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice.

Unit 1 : Introduction to Software Engineering

A. Definition
B. Need and Software problem
C. Software Crises
D. Software Engineering Problem
    1. Fundamental Problem
    2. Important Quality of Software Product
e. Software Engineering Approach
    1. Phase Development Process
    2. Life Cycle of Software
f. Principles Of Software Engineering
g. Software Development Process Model
    1. Waterfall model
    2. Spiral Model
    3. Prototype Model
    4. Iterative Model

Unit 2 : Project Management

A. The Phase Management Process
B. Software Metrics
    1. Size Oriented Metrics
    2. Function Oriented Metrics

Unit 3 : Software Requirement and Specification

A. Introduction and Need of SRS
B. Structured Analysis
    1. Data Flow Diagram
    2. Context Diagram
    3. Data Dictionary

Unit 4 : Software Design & Coding

A. Principle of Software Design
    1. Partitioning
    2. Abstraction
    3. Top Down and Bottom up Strategies
B. Concept of Module
    1. Coupling
    2. Cohesion
C. Structured Chart
D. Coding – a. Rules of Good programming Style
    b. Code Verification

Unit 5 : Software Testing and Maintenance

A. Definition
B. Testing Fundamentals Error, Fault, Failure
C. Test Oracles
D. Types of Testing
    1. Black Box Testing
    2. White Box Testing
E. Level of testing- Unit, Integration, System, Acceptance
F. Introduction of Maintenance

Books

1. Software Engineering by Roger Pressmen

BCA - 305

MULTIMEDIA TOOLS AND APPLICATIONS

Max marks-50 Min marks – 20

Note : The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed not Scientific calculator.

UNIT–I

Multimedia: Needs and areas of use, Development platforms for multimedia – DOS, Windows, Linux. Identifying Multimedia elements – Text, Images, Sound, Animation and Video, Making simple multimedia with PowerPoint.

Text – Concepts of plain & formatted text, RTF & HTML texts, using common text preparation tools, Conversion to and from of various text formats, using standard software, Object Linking and Embedding concept, Basics of font design, overview of some fonts editing and designing tools, Understanding & using various text effects.

Images – importance of graphics in multimedia, Vector and Raster graphics, image capturing methods – scanner, digital camera etc. various attributes of Images – size, color, depth etc, Various Image file format – BMP, DIB, EPS, CIF, PEX, PIC, JPG, TGA, PNG and TIF format – their features and limitations, graphic file formats conversions, processing images with common software tools such as Photoshop, Paint Shop pro, Corel draw etc..

UNIT-II

Sound: Sound and it Attributes, Mono V/s Stereo sound, Sound channels, Sound and its effect in multimedia, Analog V/s Digital sound, Basics of digital sounds-Sampling, Frequency, Sound Depth, Channels, Sound on PC, Sound standards on PC, Capturing and Editing sound on PC, Overview and using some sound recording, editing software. Overview of various sound file formats on PC – WAV, MP3, MP4, Ogg Vorbose etc.

Animation: Basics of animation, Principle and use of animation in multimedia, Effect of resolutions, pixel depth, Images size on quality and storage. Overview of 2-D and 3-D animation techniques and software-animation pro, 3D studio & Paint Shop pro animator.

Animation on the Web – features and limitations, creating simple animations for the Web using GIF Animator and Flash.

UNIT–III

Video: Basics of Video – Analog and Digital Video, How to use video on PC. Introduction to graphics accelerator cards, DirectX Introduction to AV/DV and IEEE1394 cards , Digitization of analog video to digital video, Interlacing and non-interlacing, Brief note on various video standards – NTSC, PAL, SECAM, HDTV, Introduction to video capturing Media & instrument – Videodisk, DVCAM, Camcorder, Introduction to digital video compression techniques and various file formats – AVI, MPEG, MOVE Real Video.

Brief Introduction to video editing and movie making tools – Quick time, video for windows & Adobe premier.

UNIT–IV

Authoring tools for CD Based Multimedia: Type of multimedia authoring tools, key factors of selecting CD based multimedia authoring tools, Planning and distribution of a multimedia project. Multimedia development team & skills requirement, Stages in designing & producing multimedia products for CD, Testing of product, distribution of multimedia product, various formats of CD's and DVD's.

UNIT – V

Multimedia on the Web: Bandwidth relationship, broadband technologies, Text in the web –

Dynamic and embedded font technology, Audio on the Web – Real Audio and MP3/MP4, Audio support in HTML, Graphics – HTML safe color palate, Interlaced V/s Non interlaced model, Graphics support in HTML, Image Map, Video on the Web – Streaming video, Real Video, MPEG and SMIL, Virtual Reality on the Web.

TEXT AND REFERENCE BOOKS :

1. ***Multimedia: Making It Work*** *(4th Edition) – by Tay Vaughan, Tata Mcgraw Hills.*
2. ***Multimedia In Action –*** *James E Shuman – Vikas Publishing House.*
3 ***Multimedi Basics –*** *Volume – 1 Technology, Andreas Holzinger, Firewall Media(Laxmi Publications Pvt. Ltd) New Delhi.*

BCA-306(A)
FINANCIAL MANAGEMENT & ACCOUNTANCY

Max marks-50

Note : The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed not Scientific calculator.

UNIT - I

Financial Accounting : Meaning and Nature, Accounting Principles underlying the preparation of financial statements.
Preparation of Financial Statements : A Synoptic view-Profit and Loss account, Balance Sheet

UNIT - II

Financial statement Analysis Ratio analysis (Liquidity, Solvency, Profitability, Efficiency), Statement of Changes in financial position-working capital basis.

Conceptual Framework of Cost Accounting Meaning nature and need of cost accounting, Elements of cost, Preparation of cost – sheet, Cost concept –Fixed and variable costs, sunk costs, Out of pocket costs, Relevant and irrelevant costs, Opportunity and imputed costs.

UNIT - III

Cost – volume Profit (CVP) relationship Break-even analysis; (single and multiple products), Determination of sales volume to attain desired profits, Cash break-even point. Graphic presentation of CVP relationship. Assumptions and limitation of break-even analysis

UNIT - IV

Budgeting : Definition and objective. Preparation of various types of budgets including cash budget. Fixed and flexible budgets.

UNIT - V

Cost Accumulation System Job and Process(simple treatment)
Variable and absorption costing systems Comparison for income determination (simple treatment), Variable costing as a tool of decision-making

BCA306 (B) Foundation Course

Max marks-50 NOTE :- The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice.

Unit-I
Essay type answer in about 200 words. Four essay. Type question to be asked and two to be attempted.
Unit –II
Writing skills for composition- Essay writing.
Unit-III
Precis Writing
Unit-IV
Roading Comprehension of an unseen passage :10 Marks
Unit –V
Vocabulary based on text :5 Marks Grammar- Advanced Exercises.

Note:- Questions on unit I and IV (b) Shall be asked from the prescribed text. Which will comprise popular creative writing and the following items. Minimum needs- Housing and Transport. Geo - economic profile of women and Empowerment, Management of change . Ouality of life, war and human survival, the question of human social value survival , the question of human Social value, new Economic Philosophy. Recent Liberalisation methods, Demoratic decoralisation(With reference to 73,74 constitutional Amendment) The text book shall be sponsored by the M.P. Higher Education Department and published the
M.P. Hindi Granth Academy.

PRACTICAL WORK BCA III

BCA-305(B) MULTIMEDIA TOOLS AND APPLICATIONS

1. Scheme of Examination:-

Practical examination will be of 3 hours duration. The distribution of practical marks will be as follows

Programme 1	-10
Programme 2	-10
Viva	-15
Practical Copy + Internal Record	-15
Total - **50**	

2. In every program there should be comment for each coded line or block of code

3. Practical file should contain printed programs with name of author, date, path of program, unit no. and printed output.

5. All the following programs or a similar type of programs should be prepared

FLASH LIST OF PRACTICALS

Draw the following shapes neatly in Flash and convert them in symbols. Also apply different transformations like scale, rotate, skew, skip etc.

Create a Flash movie to draw the symbol of an animal and apply motion between.

Create a Flash movie to create a minimum of five layers (Water, fish, bubbles, plants etc) of an aquarium and apply motion between.

Create a Flash movie to create mask.

Create a Flash movie to create Fade In/Fade Out in four pictures.

Create a Flash movie to create the symbol of a wheel and scale and rotate it.

Create a flash movie to create growing circles.

Create hand writing in Flash.

Create a Flash movie of a moving car with rotating wheels.

1. Fish	2. Palm Tree
3. Swan	4. Teddy Bear
5. Tree	6. Santa Claus
7. House	8. Car
9. Ballon	10.Boat

Transform a circle into a square using shape tween.

Create a Flash movie to import text from MS-Word and apply different transformations.

Create a Flash movie to demonstrate onion skin markers.

Create a Flash movie to create ripple effect.

Create a Flash movie to demonstrate motion guide.

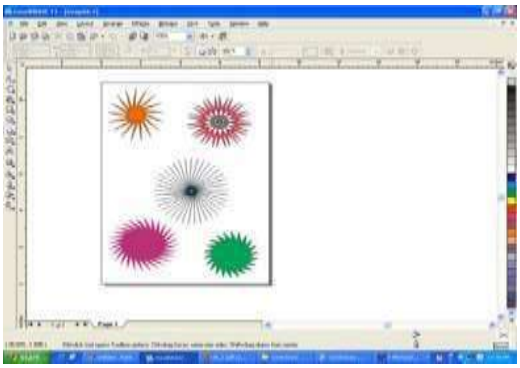
Create a Flash movie of a sheep climbing a mountain using layers. Tehe scenery should contain mountain, river, trees, clouds, birds, sheep etc.

PHOTOSHOP LIST OF PRACTICALS

Import an image in Photoshop and change its background using marquee and lasso tools.
Import an image in Photoshop and copy it using heal brush tool.
Import an image in Photoshop and desaturate it and recolor it.
Use layers and filters to design an image in Photoshop. Use the flatten image as well.
Import an image in Photoshop and desaturate it and reveal selective portions.

CORAL DRAW LIST OF PRACTICALS

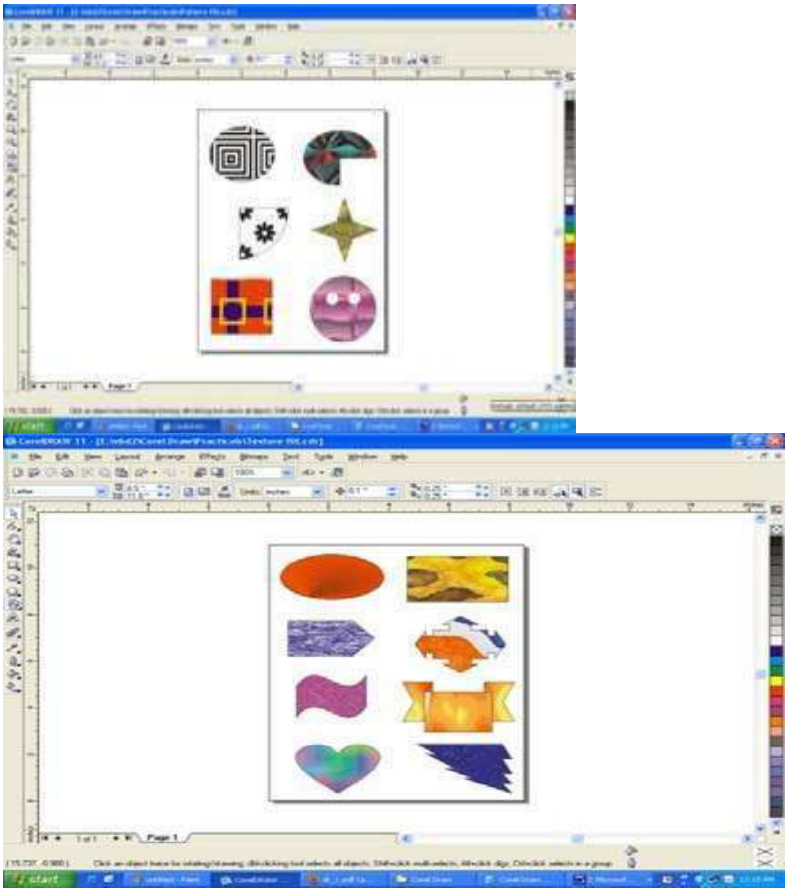
Q1. Draw the following shapes:



Q.2. Use artistic media brush tool to create different backgrounds.

Q3. Use sprayer tool to create different backgrounds.

Q.4. Draw different objects and fill them with different patterns.



1. Making a simple Video file (not using video file) with suitable sound file using Windows Movie Maker
2. Edit Video file, like - changing sound and adding starting and ending banner with title using Windows Movie Maker.
3. Create a .WAV file with the help of Windows sound recorder application.
4. With the help of Adobe Image Ready create attractive .GIF image.
5. Create & save MP4 files using appropriate software.
6. Create & save MP3 files using appropriate software.
7. Insert sound clips in webpage using Front Page application Software.

PRACTICAL WORK BCA-307 JAVA

1 Scheme of Examination:- Practical examination will be of 3 hours duration. The distribution of practical marks will be as follows

Programme 1	-20
Programme 2	-20
Programme 3	-20
Viva	-25
Practical Copy + Internal Record	-15
Total	**-100**

2 In every program there should be comment for each coded line or block of code

3 Practical file should contain printed programs with name of author, date, path of program, unit no. and printed output.

4 All the following programs or a similar type of programs should be prepared

List of Practical

1. WAP that implements the Concept of Encapsulation.
2. WAP to demonstrate concept of Polymorphism (function Overloading and constructor Overloading).
3. WAP the use boolean data type and print the Prime number Series up to 50.
4. WAP to print first 10 number of the following Series using Do---While Loops 0, 1, 1, 2, 3, 5, 8, 11.....
5. WAP to sort the element of One Dimensional Array in Ascending order.
6. WAP for matrix multiplication using input/output Stream.
7. WAP to add the elements of Vector as arguments of main method (Run time) and rearrange them, and copy it into an Array.
8. WAP to check that the given String is palindrome or not.
9. WAP to arrange the String in alphabetical order.
10. WAP for StringBuffer class which perform the all methods of that class.
11. WAP to calculate Simple Interest using the Wrapper Class.
12. WAP to calculate Area of various geometrical figures using the abstract class.
13. WAP where Single class implements more than one interfaces and with help of interface reference variable user call the methods.
14. WAP that use the multiple catch statements within the try-catch mechanism.
15. WAP where user will create a self-Exception using the "throw" keyword.
16. WAP for multithread using the isAlive(), join() and synchronized() methods of Thread class.
17. WAP to create a package using command and one package will import another package.
18. WAP for AWT to create Menu and Popup Menu for Frame.
19. WAP for Applet that handle the KeyBoard Events.
20. WAP, which support the TCP/IP protocol, where client gives the message and server will receive the message.
21. WAP to illustrate the use of all methods of URL class.
22. WAP for JDBC to insert the values into the existing table by using prepared Statement.
23. WAP for JDBC to display the records from the existing table.
24. WAP to demonstrate the Border Layout using applet.
25. WAP for Applet who generate the MouseMotionListener Event.
26. WAP for display the checkboxes, Labels and TextFields on an AWT.
27. WAP to calculate the Area of various geometrical figures using the abstract class.
28. WAP for creating a file and to store data into that file.(Using the FileWriterIOStream)
29. WAP to read file and display its content using FILEINPUTSTREAM & RANDOMACCESSFILE
30. WAP accepting 2 inputs as a source and target file name and writes the content from the source to

target.
31. WAP to display your file in DOS console use the Input/Output Stream.
32. WAP to create an Applet using the HTML file, where Parameter Pass for font Size and Font type and Applet message will change to corresponding parameters.

PRACTICAL WORK BCA III BCA-308 Project

1. **Scheme of Examination:- The Project should be done by individual student.** Practical examination will be of 3 hours duration. The distribution of practical marks will be as follows

Software Demonstration	-40
Project Report (Hard Copy + Soft Copy)	-20
Project Demonstration/Presentation	-20
Project Viva	-20
Total	**-100**

2. Format of the student project report on completion of the project

• Cover page as per format
• Certificate of Approval
• Certificate of project guide/Center Manager
• Certificate of the company/Organization
• Certificate of Evaluation
• Declaration / Self Certificate
• Acknowledgement

In the "Acknowledgement" page, the writer recognizes his /her indebtedness for guidance and assistance of the thesis/report adviser and other members of the faculty. Courtesy demands that he/she also recognize specific contributions by other persons or institutions such as libraries and research foundations. Acknowledgements should be expressed simply, tastefully, and tactfully.

- Synopsis of the project
- Main Report
  - ✓ Objectives & Scope of the project
  - ✓ Theoretical Background of Project
  - ✓ Definition of problem
  - ✓ System Analysis & Design
  - ✓ System Planning (PERT Chart)
  - ✓ Methodology adopted, system Implementation & Detail of Hardware & Software used
  - ✓ System maintenance & Evaluation
  - ✓ Cost and benefit Analysis
  - ✓ Detailed Life Cycle of the project
    - ERD,DFD
    - Input and Output Screen Design
    - Process involved
    - Methodology used for testing
    - Test Report, Printout of the code sheet
  - ✓ User/Operational Manual- including security aspects, access rights, back up, Controls etc.
  - ✓ Conclusion
  - ✓ References
  - ✓ Soft copy of the project on CD

Formats of various certificates and formatting styles are as:

1. **Project report Cover Format**:

A
Project Report
On
Title of the Project Report
(Times New Roman.Italic, Font Size=24)

Submitted in partial fulfillment of the requirements for the award of degree
Bachelor of Computer Application
From

Pt.Ravishankar Shukla University Raipur (C.G.)
(Bookman Old Style, 16 Point, Center)
Year : xxxx

Logo of college

Guide
(Guide Name)

Submitted by:
(Student's Name)
Roll No:

Submitted to
(College Name)
Pt.Ravishankar Shukla University Raipur (C.G.)

2. Certificate of Approval by Head of the Department in letter head

CERTIFICATE OF APPROVAL

This is to certify that the Project work entitled " _____" is carried out by Mr/Ms/Mrs _____ , a student of BCA – III year at (**College Name)** is hereby approved as a credible work in the discipline of Computer Science & Information Technology for the award of degree of **Bachelor of Computer Application** during the year_____**from Pt. Ravishankar Shukla University, Raipur (CG).**

(Head Name)

4. Certificate from the Guide in letter head

CERTIFICATE

This is to certify that the Project work entitled " _____" Submitted to the **(College Name)** by Mr/Ms/Mrs _____ Roll No_____, in partial fulfillment for the requirements relating to nature and standard of the award of **Bachelor of Computer Application** degree by **, Pt. Ravishankar Shukla University, Raipur (CG)** for the academic year 20_- 20_.

This project work has been carried out under my guidance.

(Guide Name)

5. Certificate of the Company or Organization from where the Project is done from the Project Manager or Project guide.
6. Certificate of evaluation in the department letter head

CERTIFICATE OF EVALUATION

This is to certify that the Project work entitled " _____" is carried out by Mr/Ms/Mrs _____ , a student of BCA – III year at (**College Name),** after proper evaluation and examination, is hereby approved as a credible work in the discipline of Computer

Science & Information Technology and is done in a satisfactory manner for its acceptance as a requisite for the award of degree of **Bachelor of Computer Application** during the year_____from **Pt. Ravishankar Shukla University, Raipur (CG).**

Internal Examiner **External Examiner**

7. Declaration of Student / Self Certificate

DECLARATION

This to certify that the project report entitled "_____", which is submitted by me in the partial fulfillment for the award of the degree of **Bachelor of Computer Application, (College Name),** comprises the original work carried out by me.

I further declare that the work reported in this project has not been submitted and will not be submitted, either in part or in full for the award of any other degree or diploma in this Institute or any other Institute or University.

Place : (Name)
Date : (Roll No)

BCA – 105

WEB TECHNOLOGY AND E-COMMERCE

Max Marks: 80 **Min Marks: 27**

NOTE: The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed not scientific calculator.

UNIT - I Internet

Introducing Internet: History, Evolution, Internet applications, Intranet, WWW, Emergence of Web, Web page, Web Site, Web Servers, Web Browser, Search Engine, URL, DNS, Internet Connection, Internet Service Provider, Web Design Strategies. HTTP, FTP, SMTP, TELNET. Internet services: Email concept, Sending and receiving secure Email, Voice and Video Conferencing, Web Based chat services, Chat Services, Internet Messaging, Internet Relay Chat, NewsGroup.

UNIT - II Introducing HTML Document Structure

Introduction, HtmlVersion, The<!DOCTYPE>Element, <HTML>Element, <Head>Element,<Title> element, <body> element. Creating headings on a web pages: Aligning the headings, creating list, Working with Links: Creating a Hyperlinks, Setting the Hyperlink Colours, Linking Different sections of A web page, Creating Paragraph, Working with Images: Inserting image on a web page, Display Alternate Text for an image, Adding a Border to an Image, Aligning an Image ,Using Images as Links, Working with Tables: Creating a Table, Specifying a Caption To a Table, Adding a Table Heading, Setting the table Border, Aligning a Table And cell content, Changing background colour of a table, Setting Cell Padding and Cell Spacing, Spanning Rows and Columns, Working with Frames: Creating a Frame, Creating Vertical and Horizontal Frames, Setting the Frame Border Thickness, Applying Hyperlink Targets to a Frame.

UNIT - III HTML Forms, HTML Controls and CSS

Creating an HTML Form, Specifying the Action URL and Method to Send the Form, Using the HTML Controls.

CSS: Introducing Cascading Style Sheets, Inline Styles, External Style Sheets, Internal Style Sheets, Style Classes, Multiple Styles.

UNIT - IV DHTML AND JAVASCRIPT

Introducing DHTML, Introducing JavaScript, Client-Side Benefits of using JavaScript over VB Script, Embedding JavaScript in an HTML Page, Handling Events, Using Variables in JavaScript, Using Array in JavaScript, Creating Objects in JavaScript, Using Operators, Working with Control Flow Statements, Working with Functions.

Unit – V Introduction to E Commerce

Definition of E-commerce, The scope of E-commerce, Definition, Internet and its impact on traditional businesses, E-payment System, Security threats with E-commerce. Types of E-commerce: Business-to-Business (B2B), Business-to-Consumer (B2C), Business-to-Business-to-Consumer (B2B2C), Consumer-to-Consumer (C2C), E-market, Future of E-market.

TEXT BOOKS:

1. Web Technologies, HTML, JAVASCRIPT, PHP, JAVA, JSP, ASP.NET, XML and Ajax, Black Book, Dream Tech Press.
2. Internet, The Complete Reference Millennium Edition Margaret Levine Young, Doug Muder.
3. The Complete Reference, HTML and CSS, Thomas A. Powell, McGrawHill.
4. JavaScript The Complete Reference,Thomas Powell, Fritz Schenider, McGrawHill, Third Edition
5. Introduction To HTML, KamleshN.Agrawal , O.P. Vyas , P.A.Agrawal.
6. Web Technology and Design, Xavier,C, New Age International.
7. Web Technology, A Developer Perspective, Gopalan and Akilandeshwari, PHI.
8. HTML, DHTML, JavaScript, Perl and CGI, Ivan Bayros, BPB Publication.
9. Internet and Web Design, Ramesh Bangia , New Age International.
10. Business on the net, Kamlesh N. Agarawala, AmitLal&DeekshaAgarawal, Macmillan India Ltd.

BCA – 106
COMMUNICATION SKILLS

Max Marks: 80 **Min Marks: 27**

NOTE: The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculator is allowed not scientific calculator.

UNIT - I

Vocabulary, knowledge of at least one thousand words with their spelling, Meanings and usage. Phrases.

UNIT - II

Structure of sentences: Simple, Complex and Compound. Clauses and Subordinate clauses.

UNIT - III

The tenses and aspects. The modal, The gerund, The participle, The infinitive.

UNIT - IV

Transformation of sentences:

1. Interchange of Active and Passive Voice.
2. Interchange of Affirmative and Negative Sentences.
3. Interchange of Explanative and Assertive Sentences.
4. Interchange of interrogative and Assertive Sentences.
5. Direct and Indirect Speech.

UNIT - V

Practical application of grammar. Practice in talks, Conversation and writing. Report writing. Writing of applications, Letter writings, Description of events.

TEXT BOOKS:

1. Living English Structure, W.S. Allen.
2. A Practical English Grammar, Thomson and Martinet.

Bridge course for BCA (Only For Non mathematics Students)

Max Marks: 50 **Min Marks: 17**

Note: Fundamentals of the topics are to be dealt to enable the students to understand thetopics. The Question Paper setter is advised to prepare unit-wise question with the provision ofinternal choice.. Only Simple calculator is allowed not scientific.

UNIT -I
Algebra
Partial fractions, Arithmetic Progression & Geometric Progression.Determinants and matrices,Inverse matrix.

UNIT-II
Permutation combination, method of induction, Binomial Theorem for positive integral index.And any index (without proof), Exponential and logarithmic series.

UNIT-III
Trigonometry
Measurement of angles, Trigonometric ratios, simple formula, compound angles, Trigonometricratios of multiple and sub multiple angles. Height and Distance, Inverse Function.

UNIT-IV
Geometry
Locus, Cartesian coordinate system, Distance formula, Section formula, Slope of a straight linevarious forms, Angle between two lines, pair of straight lines, parabole, ellipse andhyperbola.

UNIT-V
Statistics
Frequency Distribution, Measures of central tendency, Mean. Median, Mode, G.M., H.M., Interquartile range, Mean deviation, Standard deviation.

TEXT BOOKS:
Mathematic (class XI and XII), R.D.SHARMA
YOUGBODH Mathematics, (class XI and XII)

BCA-107 - LAB I: Programming Lab in 'C'

1 Scheme of Examination:-

Practical examination will be two programs and a project demonstration. It will be of 3 hours duration. All programs should be with flowchart & algorithms. The distribution of practical marks will be as follows

Program 1	-	20
Program 2	-	20
Program 3	-	20
Viva	-	25
[Practical Copy + Internal Record]	-	15
Total	-	**100**

2 Practical file should contain printed programs with name of author, date, path of program, unit no. and printed output.

3 In every program there should be comment for each coded line or block of code

4 All the following programs or a similar type of programs should be prepared

List of Practical

INPUT AND OUTPUT, FORMATTING

2. Write a program in which you declare variable of all data types supported by C language. Get input from user and print the value of each variable with alignment left, right and column width 10. For real numbers print their values with two digits right to the decimal.

LOOPS, DECISIONS

3. Write program to print all combination of 1 2 3.

4. Write program to generate following pattern

a) A B C D E F G

A B C E F G

A B F G

A G

b) 1

1 2

1 2 3

1 2 3 4

c)

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

d)

```
    1
  1 2 1
1 3 3 1
1 4 6 4 1
```

5. Write main function using switch…case, if..else and loops which when called asks pattern type; if user enters 11 then first pattern is generated using for loop. If user enters 12 then first pattern is generated using while loop. If user enters 13 then first pattern is generated using do-while loop. If user enters 21 then a second pattern is generated using for loop and so on.

6. Write program to display number 1 to 10 in octal, decimal and hexadecimal system.

7. Write program to display number from one number system to another number system. The program must ask for the number system in which you will input integer value then the program must ask the number system in which you will want output of the input number after that you have to input the number in specified number system and program will give the output according to number system for output you mentioned.

8. Write a program to perform following tasks using switch…case, loops, and conditional operator (as and when necessary).

a) Find factorial of a number
b) Print fibonacci series up to n terms and its sum.
c) Print sin series up to n terms and its sum.
d) Print exponential series up to n terms and its sum.
e) Print prime numbers up n terms.
f) Print whether a given year is leap or not.

9. Write program no. 6 but use library function to perform above tasks.

ARRAY

10. Create a single program to perform following tasks using switch, if..else, loop and single dimension character array without using library function:

a) To reverse the string.
b) To count the number of characters in string.
c) To copy the one string to other string;
d) To find whether a given string is palindrome or not.
e) To count no. of vowels, consonants in each word of a sentence and no. of punctuation in sentence.
f) To arrange the alphabets of a string in ascending order.

11. Create a single program to perform following tasks using switch, if..else, loop and single dimension integer array:

a) Sort the elements.
c) Search for presence of particular value in array element using linear search.
d) Search for presence of particular value in array element using binary search.

12. Write a program that read the afternoon day temperature for each day of the month and then report the month average temperature as well as the days on which hottest and coolest days occurred.

13. Create a single program to perform following tasks using switch, if..else, loop and double dimension integer array of size 3x3:

a) Addition of two matrix.
b) Subtraction of two matrix.
c) Multiplication of two matrix.
d) Inverse of matrix.
e) Transpose of matrix.
f) Sum of diagonal elements

14. Create a single program to perform following tasks using switch, if..else, loop and double dimension character array of size 5x40:

a) Sorting of string.
b) Finding the largest string.
c) Finding the smallest string.
c) Searching for presence of a string in array.

FUNCTIONS

15. Write program using the function power (a, b) to calculate the value of a raised to b.

16. Write program to demonstrate difference between static and auto variable.

17. Write program to demonstrate difference between local and global variable.

18. Write a program to perform following tasks using switch…case, loops and function.

    a) Find factorial of a number
    b) Print Fibonacci series up to n terms and its sum.
    c) Print Sin series up to n terms and its sum.
    d) Print exponential series up to n terms and its sum.

19. Write a program to perform following tasks using switch…case, loops and **recursive** function.

    a) Find factorial of a number
    b) Print Fibonacci series up to n terms and its sum.
    c) Print Sin series up to n terms and its sum.
    d) Print exponential series up to n terms and its sum.
    e) Print natural series up to n terms and its sum

20. Write a function to accept 10 characters and display whether each input character is digit, uppercase letter or lower case letter.

Array & Function

21. Create a single program to perform following tasks using switch, if..else, loop, function and double dimension integer array of size 3x3:

    a) Addition of two matrix.
    b) Subtraction of two matrix.
    c) Multiplication of two matrix.
    d) Inverse of matrix.
    e) Transpose of matrix.

22. Create a single program to perform following tasks using switch, if..else, loop, user defined function and single dimension character array:

    a) To reverse the string.
    b) To count the number of characters in string.
    c) To copy the one string to other string;
    d) To find whether a given string is palindrome or not.
    e) To count no. of vowels, consonant in each word of a sentence and no, of punctuations in sentence.

23. Create a single program to perform following tasks using switch, if..else, loop, function and single dimension integer array:

    a) Sort the elements.
    b) Find largest element and smallest element.
    c) Search for presence of particular value in array element using linear search.
    d) Search for presence of particular value in array element using binary search.

24. Create a single program to perform following tasks using switch, if..else, loop, function and double dimension character array of size 5x40:

    a) Sorting of string
    b) Finding the largest string, lexicographically.
    c) Finding the smallest string, lexicographically.
    c) Searching for presence of string in array.

STRUCTURE & UNION

25. Create a structure Student having data members to store roll number, name of student, name of three subjects, max marks, min marks, obtained marks. Declare a structure variable of student. Provide facilities to input data in data members and display result of student.

26. Create a structure Date with data member's dd, mm, yy (to store date). Create another structure Employee with data members to hold name of employee, employee id and date of joining (date of joining will be hold by variable of structure Date which appears as data member in Employee Structure). Store data of an employee and print the same.

27. Create a structure Student having data members to store roll number, name of student, name of three subjects, max marks, min marks, obtained marks. Declare array of structure to hold data of 3 students. Provide facilities to display result of all students. Provide facility to display result of specific student whose roll number is given.

28. Write program to create structure complex having data members to store real and imaginary part. Provide following facilities:

    a) Add two complex nos. using structure variables.
    b) Subtract two complex nos. using structure variables.
    c) Multiply two complex nos. using structure variables.
    d) Divide two complex nos. structure variables.

Use structure as argument to function and function returning structure.

POINTER

29. Define union Emp having data members:-one integer, one float and one single dimension character array. Declare a union variable in main and test the union variable.

30. Define an enumDays_of_Week members of which will be days of week. Declare an enum variable in main and test it.

31. Write a program of swapping two numbers and demonstrates call by value and call by reference.

32. Write program to sort strings using pointer exchange.

33. Write a program in c using pointer and function to receive a string and a character as argument and return the no. of occurrences of this character in the string.

34. Create a program having pointer to void to store address of integer variable then print value of integer variable using pointer to void. Perform the same operation for float variable.

35. Write program to find biggest number among three numbers using pointer and function.

36. Write program to Create a structure Employee having data members to store name of employee, employee id, salary. Use Pointer to structure to store data of employee and print the stored data-using pointer to structure.

37. Write program to Create a structure Employee having data members to store name of employee, employee id, salary. Use Pointer to structure to simulate dynamic array of structure store data of n employees and print the stored data of n employees using pointer to structure.

38. Write a program to sort a single dimension array of integers of n elements simulated by pointer to integer. Use function for sorting the dynamic array.

39. Write a program to sum elements of a double dimension array of integers of m rows and n columns simulated by pointer to pointer to integer. Use function for sum the elements of the dynamic array.

40. Write program to demonstrate difference between character array and pointer to character.

41. Write program to demonstrate difference between constant pointer and pointer to constant.

42. Write program to demonstrate pointer arithmetic.

43. write program to demonstrate function-returning pointer.

44. Write program using self-referential pointer to structure to create and print the linked list, data structure.

BCA-108 - LAB II: PC Software Lab

1. Scheme of Examination: -

Practical examination will be of 3 hours duration. The distribution of practical marks is as follows:

Program 1 (MS-Office)	-	15
Program 2 (MS-Office)	-	15
Program 3 (MS-Office)	-	15
Program 4 (Multimedia)	-	15
Viva-Voice	-	25
[Practical Copy + Internal Record]	-	15
Total	-	**100**

2 In every program there should be comment for each coded line or block of code.

3 Practical file should contain printed programs with name of author, date, path of program, unit no. and printed output.

4 All the following programs or a similar type of programs should be prepared.

List of Practical

MS- WORD

File New, Open, Save, Cut, Copy, Paste, Drag Drop, Bullets and Numbering, Undo, Redo, Find, Replace, Paragraph Formatting, Character Formatting and Page Formatting.

1. Open a document. Type the following text and perform the tasks as instructed below:-

Working with Word Processor

As already mentioned, a word processor is a package that processes textual matter and creates organized and flawless documents. In addition to it a word processor not only remote all the limitations of typewriter but also offers various useful features that cannot be even dreamt of with typewriter.

Also if same textual matter is to be reproduced with minor changes, retyping the only option in typewriters.

The word processing (and word processor) originated way back in 1964 when special typewriters. Magnetic Tape Selectric typewriters (MIST) were launched by IBM (International Business Machines).

(i) Insert the following text after the first paragraph

The main components of a word processing system are listed below:

a. Computer
b. Printer
c. A word processing software

(ii) Save the document as Word1.doc

(iii) Move the second paragraph to the end of the document. Using darg& drop.

(iv) Move the second paragraph in the end of the document using cut, paste operations.

(v) Undo the above actions.

(vi) Now use Redo actions

(vii) Go to the End of the document (in one step)

(viii) Go to the Beginning of document (in one step)

(ix) Insert page break before the third paragraph.

(x) Search the word "computer: in your document with options Match case, find whole words only.

(xi) Replace the word "typewriters" with "word processor"

(xii) Undo the above action

(xiii) Remove All page breaks from your document

(xiv) Change the magnification of your document to different percentages using zoom features.

(xv) Format the above written paragraphs and give the options as follows:

- Alignment justified
- Indentation: left 0.2 right:0.2
- Spacing: before 6 pt. after:6 pt.
- Special: first line by :0.4"
- Line spacing 1.5 lines.

(xvi) Set the default tab stop to 0.3"

(xvii) Set the margins to 1.25

(xviii) Format the page using

a. Left margin:0.5, right margin: 0.5
b. Top margin:1.5, bottom margin:0.5
c. Gutter Margin: 1indentation: left 0.2 right:0.2
d. Header Margin:0.5

(xix) Format the each occurrence of group of words 'Word Processor' as bold, italic, under line and small caps using find and replace with formatting options.

(xx) Align the heading to Center and make it bold, underlined and italicized.

File New, Open, Save, Find, Replace, Paragraph Formatting, Character Formatting and Page Formatting.

2. Type the text as show below and perform the tasks as directed:

Computers
COMPUTER is an electronic device that processes data and gives meaningful information.
Computers are being used in almost all the fields today
EXPERT SYSTEMS
HUMAN THINKING AND ARTIFICAL INTELLIGENCE
Can computer think?
AI at work Today: Natural Language programs and Expert Systems.
THE IMPACT OF COMPUTERS ON PEOPLE
The Positive Impact
The Potential Dangers
THE IMPACT OF COMPUTERS ON ORGANIZATIONS
The information Processing Industry

The Positive impact on Using Organizations
The Potential Dangers for Using Organizations

1. Search for the word 'Computer' in the entire document. All the occurrences of the given word are to be searched irrespective of the case.

2. In the above question note that word also searches 'computerization and 'computerisations'. Now make sure that this time Word searches only for the word 'computer' in the entire document.

3. Change the entire uppercase letter to lowercase.

4. Give a heading to the above written text 'COMPUTERS IN TODAY'S WORLD'

5. Centre aligns the Heading text Computer that appears in first line.

6. Apply outside border to entire document.

7. Apply outside border to the just heading text.

8. Change page setup according to the following specifications
Top margin: 1.5", bottom margin: 1.5"
Gutter: 1", left margin: 1.5"
Right margin: 1"
Page width: 7.5", page height: 6.5 "
Orientation: portrait

9. Give a header 'Creations' and footer 'The school of computing'. The footer should also consist of page no's.

10. Give appropriate commands for giving different header and footers for first page and odd & even pages.

11. Save and close the document.

3. Write the following equations in MS-Word:
$4H_3PO_3=3H_3PO_4+PH_3$, $PCL_3+CL_2=PCL_5$, $(x+y)^2=x^2+y^2+2xy$

4. Write the following equations in MS-Word:
$C_2H_5OH+PCL_5=C_2H_5CL+POCL_3+HCL$, $A = \pi r^2$, $a \div b \neq 0$

5. Write the following in MS-Word:

1. Preheat the oven to 220°C.
2. Copyright ©
3. Registered ®
4. Trademark ™

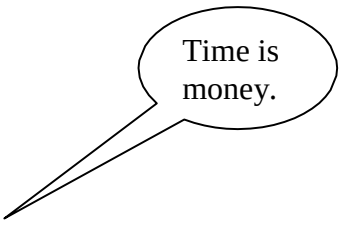
6. Create the following table in MS-Word:

Name		Rahul	
Roll No.		101	
Subject	**Max**	**Min**	**Obtain**
Java	100	33	75
Multimedia	100	33	70

7. Create a document in MS-Word. Set the watermark as **Microsoft**. Also write the following text as formatted below:

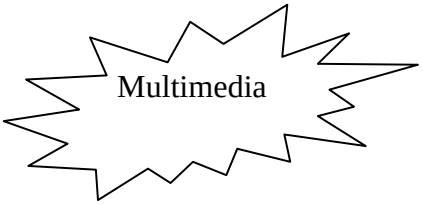
easuring programming progress by lines of code is like measuring aircraft building progress by weight.

--Bill Gates



8. Create the following:

9. Create the following:



10. Create the following table in MS-Word:

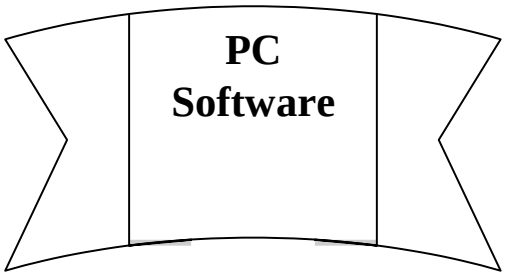
Admission 2011-2012

Course	OC	OB	MBC	SC/ST	Total
Computer Science	9	18	5	5	37
Commerce	14	25	6	5	50
Mathematics	12	20	4	4	40

11. Create Table as shown

Car		Price
Maruti	Omni Van	200000
	Maruti 800	242000
Tata	Sumo	390000
	Sierra	447000

12. Insert the following in MS-Word.



13. Insert the following in MS-Word.

14. Write the following in MS-Word.

- This is sentencecase.
- this is lowercase.
- THIS IS UPPERCASE.
- This Is Capitalise Each Word.
- tHIS IS tOGGLEcASE.

15. Create the following list in MS-Word:

1. Actors
    1. Bruce Willis
    2. Gerard Butler
    3. Vin Diesel
2. Actress
    1. Julia Roberts
    2. Angelina Jolie
    3. Kate Winslet
    4. Cameron Diaz

16. Write the following in MS-Word:

1. Cricket Players

3. Batsman

1. Sachin Tendulkar
2. Rahul Dravid
3. VirendraSehwag

4. Bowler

a.Kumble

b. Zaheer Khan

c.Balaji

5. Spinner

a) Harbhajan

b) Kumble

c) Kartik

17. Write a letter to send invitation to your friend inviting on your birthday.
18. Create labels for your friends' address.

MS – EXCEL

1. Create the following worksheet and save the worksheet as wages.xls

PACE COMPUTERS (ATC CEDT), Govt. of India
Payroll for Employee (Temporary)

Today's date		Pay Rate :	

Worker's Name	Hired On	days Worked	Gross Wages
Kushagra	3-Mar-07		
Pradeep	4-Mar-07		
Puneet	5-Mar-07		
Rajeev	6-Mar-07		

(I) Calculate days work and gross wages

2. Create the following worksheet and save the worksheet as wages.xls

Name Basic (monthly) (Rs.)	HRA(% of basic)	DA (Rs.)	Total Salary (1997)	Bonus (Rs)	Total Salary (1998)	% (Increase)
Shirome5000	10	450		1200		
Somya9000	15	800		200		
Tanya7000	12	900		1800		

- Calculate the total salary as sum of Basic salary, HRA ,DA, for each employee for 1997
- Calculate total salary for year 1998 as sum of salary of 1997 and bonus
- Calculate % increase in salary from 1997 to 1998

3. Create a worksheet as follows

Pace computer (ATC CEDT) Govt. Of India
Payroll for employee (Permanent)

Empcode	name	doj	salary	bonus	net salary
E001	Meenu	3-Mar-95	5000		
E002	Manoj	4-Mar-06	4000		
E003	Preeti	3-Mar-95	4800		
E004	Sumita	6-Mar-07	7500		

i. allow bonus 8000 to employee having service >2 year other vise allow bonus 3000
ii. find net salary as sum of bonus and salary

4. create the worksheet as follows

Roll No	Name	English	Maths	Total	Average	Division
101	Kushagra	95	99			
102	Ajay	92	95			
103	Vijay	70	69			

Class Average		

i. find Total of two subject for each student
ii. find average of two subject for each student
iii. find class as average of average column
iv. find division of student as first, second, third, assume percentage of division of your own and maximum marks in each student as 100

v. Apply conditional formatting for division column, first division should be in bold, second division should be in italic and third division should be underline

1. Create macro in excel to make selected cell, bold, italic outside bordered and center across select

2. create bar chart with given data

	2001	2002	2003
Tea	19	23	25
Coffee	22	24	22
Sugar	45	40	45

(I) Provide heading production detail
(II) Provide z axis title; lacks metric tone
(III) Provide x axis title year

3. Create a table with column heading as shown below and using form perform data entry of records.

Zone	Department	Employee	Salary
West	Marketing	Mukesh	10500
East	Sales	Rahul	20000
South	Marketing	Suresh	5500
North	Marketing	Anju	25000
South	Sales	Neeraj	8000
North	Sales	Ajay	8000
South	Marketing	Mahesh	7500
West	Sales	Rajesh	4500

i. Sort the data according to Zone then by Department
ii. Use group and outline feature to show & hide details

8. Create a table with column heading as shown below and using form perform data entry of records.

Zone	Department	Employee	Salary
West	Marketing	Mukesh	10500
East	Sales	Rahul	20000
South	Marketing	Suresh	5500
North	Marketing	Anju	25000
South	Sales	Neeraj	8000
North	Sales	Ajay	8000
South	Marketing	Mahesh	7500
West	Sales	Rajesh	4500

(I) Use filter command to show records having zone: West
(II) Use filter command to show records having zone: West and salary less than 5000
(III) Use filter command to show records having salary greater than 10000

9. Create pivot table using Data of exercise 8

1. Suppose a database exists in ms-access you are required to import the data. How will you?

11. Create a able using feature

Principle	1500
Rate	4%
Time	5

300	3	4	5	
1%	45	60	75	

2%	90	120	150
3%	135	180	225

12. Using goal seek feature find out the interest rate it must be to earn interest 500
Principle 1500
Rate 4%
Time 5
Interest 300

MS-Access

Create the following table in MS-Access:

Field Name	Data Type	Description
ContactID	AutoNumber	Primary Key
ContactType	Text 50	Type of contact (Wholesale, dealer, other)
Name	Text 50	Contact's first name
Company	Text 50	The Contact's employer
Address	Text 50	Contact's address
City	Text 50	Contact's city
State	Text 50	Contact's state
ZipCode	Text 50	Contact's zip code
Phone	Text 50	Contact's phone
Fax	Text 50	Contact's fax
E-Mail	Text 100	Contact's e-mail address
WebSite	Text 100	Contact's Web address
LastSalesDate	Date/Time	The most recent date the contact purchased something
DiscountPercent	Number	The customary discount provided to the customer
Notes	Memo	Notes and observations regarding this customer
Active	Yes/No	Whether the customer is still buying or selling products

Create the following tables in MS-Access with the refential integrity-foreign key:

1. tblProducts
Primary Key - ProductID

ProductID	Description	Category	Quantity	Cost	RetailPrice	ProductNumber	SalePrice	Taxable

2. tblSalesLineItems
Primary Key - SalesLineItemID

SalesLineItemID	InvoiceNumber	ProductID	ProductNumber	Quantity	Description	Price	Discoun

3. tblSales
Primary Key – InvoiceNumber

InvoiceNumber	SaleDate	InvoiceDate	Buyer	PaymentMethod	TaxLocation	TaxRate

MS PowerPoint

Q 1 Create a PPT of Atleast 10 Slides with one slide for comparison, one slide displaying a chart with the table.
Q 2 Create a PPT presentation use rehearse timing for the slide show

Q 3 Create PPT presentation slide import sound and video clips.
Q 4 Create PPT presentation with hyperlinking.
Q 5 Create PPT presentation and apply themes and transitions.

FLASH LIST OF PRACTICALS

Draw the following shapes neatly in Flash and convert them in symbols. Also apply different transformations like scale, rotate, skew, skip etc.

1. Fish	2. Palm Tree
3. Swan	4. Teddy Bear
5. Tree	6. Santa Claus
7. House	8. Car
9. Ballon	10. Boat

Create a Flash movie to draw the symbol of an animal and apply motion between.

Create a Flash movie to create a minimum of five layers (Water, fish, bubbles, plants etc) of an aquarium and apply motion between.

Create a Flash movie to create mask.
Create a Flash movie to create Fade In/Fade Out in four pictures.
Create a Flash movie to create the symbol of a wheel and scale and rotate it.
Create a flash movie to create growing circles.
Create hand writing in Flash.
Create a Flash movie of a moving car with rotating wheels.
Transform a circle into a square using shape tween.

Create a Flash movie to import text from MS-Word and apply different transformations.

Create a Flash movie to demonstrate onion skin markers.
Create a Flash movie to create ripple effect.
Create a Flash movie to demonstrate motion guide.

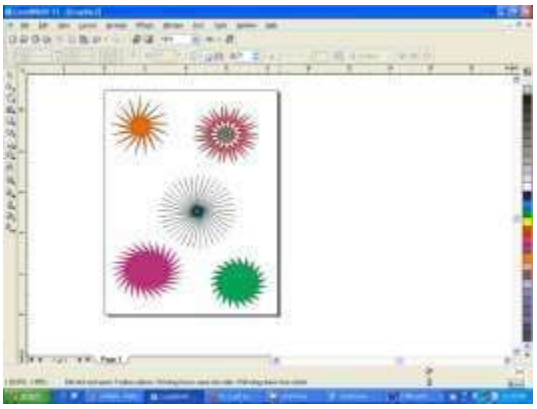
Create a Flash movie of a sheep climbing a mountain using layers. Tehe scenery should contain mountain, river, trees, clouds, birds, sheep etc.

PHOTOSHOP LIST OF PRACTICALS

Import an image in Photoshop and change its background using marquee and lasso tools.
Import an image in Photoshop and copy it using heal brush tool.
Import an image in Photoshop and desaturate it and recolor it.
Use layers and filters to design an image in Photoshop. Use the flatten image as well.
Import an image in Photoshop and desaturate it and reveal selective portions.

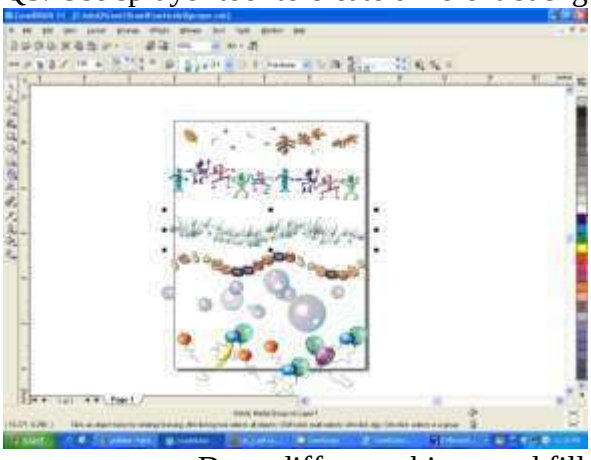
CORAL DRAW LIST OF PRACTICALS

Q1. Draw the following shapes:



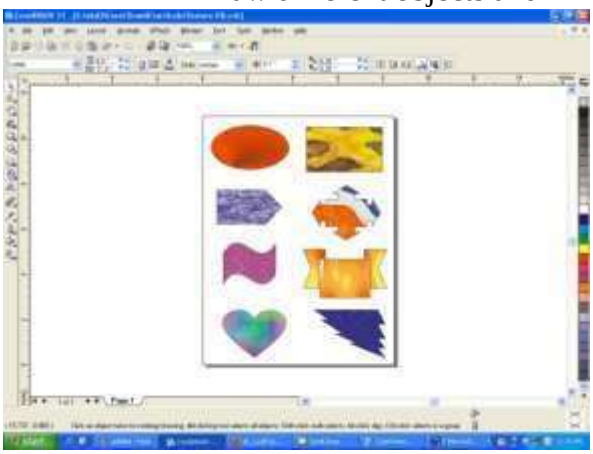
Q.2. Use artistic media brush tool to create different backgrounds.

Q3. Use sprayer tool to create different backgrounds.



Draw different objects and fill them with different patterns.

Draw different objects and fill them with different textures.



1. Making a simple Video file (not using video file) with suitable sound file using Windows Movie Maker
2. Edit Video file, like - changing sound and adding starting and ending banner with title using Windows Movie Maker.
8. Create a .WAV file with the help of Windows sound recorder application.
9. With the help of Adobe Image Ready create attractive .GIF image.
10. Create & save MP4 files using appropriate software.
11. Create & save MP3 files using appropriate software.
12. Insert sound clips in webpage using Front Page application Software.

BCA-109 - LAB III: Web Technology Lab

1. Scheme of Examination:-

Practical examination will be of 3 hours duration. The distribution of practical marks will be as follows

Program 1	-	20
Program 2	-	20
Program 3	-	20
Viva	-	25
[Practical Copy + Internal Record]	-	15
Total	-	**100**

2. In every program there should be comment for each coded line or block of code
3. Practical file should contain printed programs with name of author, date, path of program, unit no. and printed output.
4. All the following programs or a similar type of programs should be prepared

Write an HTML program to create the following table:

Class	**Subject1**	**Subject2**	**Subject3**
BCA I	Visual Basic	PC Software	Electronics
BCA II	C++	DBMS	English
BCA III	Java	Multimedia	CSA

Write an HTML program to create the following lists:

(I) C

(II) C++

(III) Fortran

(IV) COBOL

Write an HTML program to create the following lists:

1. Java
2. Visual Basic
3. BASIC
4. COBOL

Write an HTML program to demonstrate hyperlinking between two web pages. Create a marquee and also insert an image in the page.

Write an HTML program to create frames in HTML with 3 columns (Width = 30%, 30% , 40%).

Write an HTML program to create a web page with a blue background and the following text:

New Delhi

New Delhi, the capital and the third largest city of India is a fusion of the ancient and the modern. The refrains of the Muslim dynasties with its architectural delights, give the majestic ambience of the bygone era.

Write an HTML program to create the following table:

Admission

Course	**OC**	**BC**	**MBC**	**SC/ST**	**TOTAL**
Computer science	9	18	5	5	37
Commerce	14	25	6	5	50
Grand total					87

Write an HTML program to create the following table:

Car Price List

Maruti		**Tata**		**Ford**	
Model	**Price**	**Model**	**Price**	**Model**	**Price**
Maruti 800	2 Lac	Sumo	2 Lac	Ikon	5 Lac
Omni	3 Lac	Scorpio	3 Lac	Gen	2 Lac

Write an HTML program to create the following table:

Students Records

Name	**Subject**	**Marks**
Arun	Java	70
	C	80
Ashish	Java	75
	C	69

Create an HTML document and embed a flash movie in it.

Write the HTML coding to display the following table. Also insert an image in the web page.

Subject	**Max**	**Min**	**Obtain**
Java	100	33	75
Multimedia	100	33	70
Operating System	100	33	68
C++	100	33	73

Write the HTML coding to display the following table:

Name		Rahul	
Roll No.		101	
Subject	**Max**	**Min**	**Obtain**
Java	100	33	75
Multimedia	100	33	70

Write an HTML program to create a form as the following:

Enter Name:
Enter Roll No.:
Enter Age:

Enter DOB:

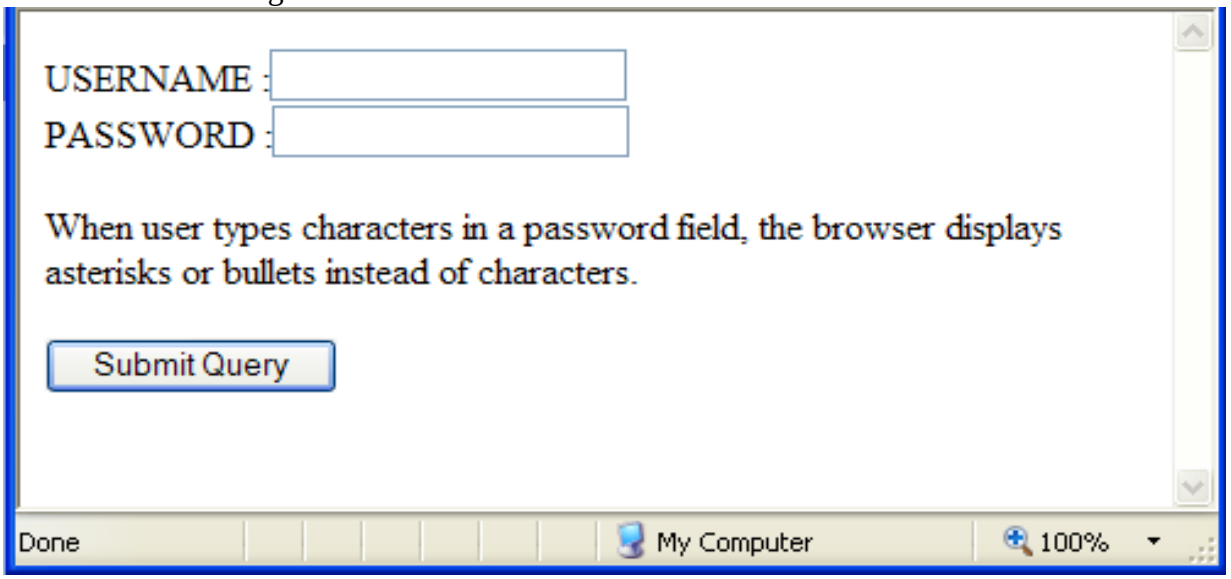
Write an HTML program to create a web page with an image as background and the following text:

New Delhi

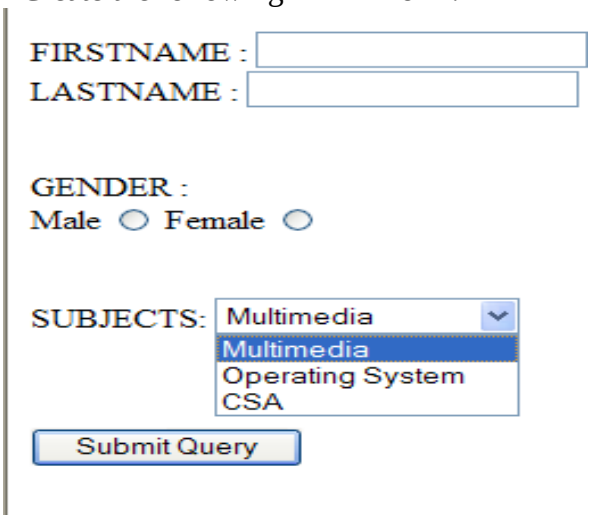
New Delhi, the capital and the third largest city of India is a fusion of the ancient and the modern. The refrains of the Muslim dynasties with its architectural delights, give the majestic ambience of the bygone era.

On the other side New Delhi, the imperial city built by British, reflect the fast paced present. The most fascinating of all is the character of Delhi which varies from the 13th present century mausoleum of the Lodi kings to ultra modern glass skyscrapers.

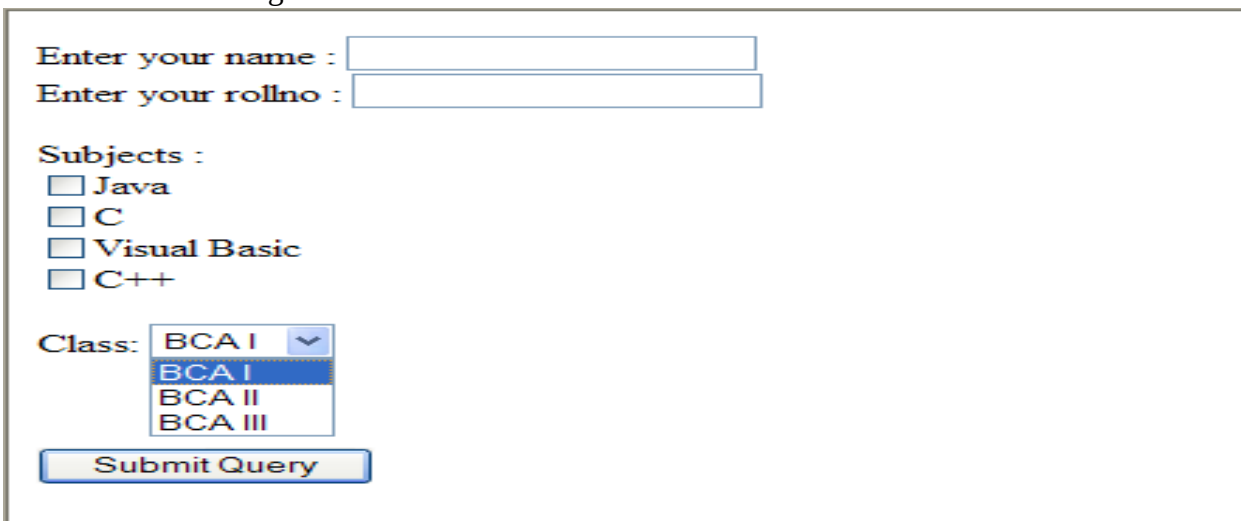
Create the following HTML form.



Create the following HTML form.



Create the following HTML form.



Write the HTML coding for the following equations:

$C_2H_5OH+PCL_5=C_2H_5CL+POCL_3+HCL$

$4H_3PO_3=3H_3PO_4+PH_3$

$PCL_3+CL_2=PCL_5$

Write the HTML code to display the following:

1. Actors
    1. Bruce Willis
    2. Gerard Butler
    3. Vin Diesel
    4. Bradd Pitt
2. Actress
    1. Julia Roberts
    2. Angelina Jolie
    3. Kate Winslet
    4. Cameron Diaz

Write the HTML code to display the following:

1. Cricket Players
    1. Batsman
        1. Sachin Tendulkar
        2. Rahul Dravid
        3. VirendraSehwag
    2. Bowler

d.Kumble

e. Zaheer Khan

f. Balaji

3. Spinner

d) Harbhajan e)Kumble

f) Kartik

Note: At least 5 programs of CSS and Java Script to be done separately.