

Syllabus for Procurement of Books

Titles	Subjects
1	MS Office(2010 or more)
2	Programming in C
3	Data Structure through C
4	C++ Programming
5	Web Technology
6	Communication Skills

MS-Office(2010 or more)		
Total Hrs : 112 (T: 48, P: 64)		
Topics	Theory	Prac.
<p>MS-WORD: Word processing using MS-WORD, File handling, Editing, Formatting, spell checking, Mail merge & Table handling & Insertion, importing, exporting & object linking embedding, printing operation.</p> <p>MS-EXCEL : Spreadsheet: features, uses & benefits in general, Entering data & selecting cells, editing worksheet data, formatting worksheet, creating Formulae, function & charts /graphs, multi operation, data base management. Presentation Tools: features, uses & benefits in general.</p> <p>MS POWER POINT: Creating & saving presentation templates & view (slide view, notes view, outline view, slide show) Formatting text, slides & graphs, animations, slides transition, multi operation.</p> <p>MS-ACCESS Introduction to Ms-Access: Objects, Tables, Queries, Forms, Creating a Database</p>	16	40
Total	48	64

Programming in C and Data Structure		
		Total Hrs : 112 (T: 48, P: 64)
Topics	Theory	Prac.
Section-I		
FUNDAMENTALS OF C : Introduction of C, C Character Set, Variables, Data Types, Operators, their precedence, expressions and their evaluation. OPERATORS AND EXPRESSIONS : Arithmetic, Unary, Relational and Logical, Assignment and Conditional Operators INPUT/OUTPUT FUNCTIONS: Formatted I/O, Character I/O & String I/O Functions. CONTROL STRUCTURES: Taking decisions using if, if-else, switch constructs and Conditional Operator, Description of break and continue Statements. Performing loops using for, while, do-while Constructs. FUNCTIONS: Library Functions vs User-Defined Functions, Declaring (Prototyping) and defining User-Defined functions, ways of passing parameters to functions, specifying Argument data types, Recursion, Storage Classes.	12	16
Section-II		
ARRAYS & STRING: What are Arrays? Declaring arrays, initializing arrays, processing of arrays, passing arrays arguments to functions, Multidimensional arrays. What are Strings? How strings are handled in C? String functions, arrays of string. POINTERS: What is a pointer variable? Declaring pointers, accessing values via pointers, pointer arithmetic, pointer to strings, passing arguments using pointers. STRUCTURE AND UNIONS: Defining a structure type, declaring variables of structure type, initializing structures. Accessing Structure Elements, Use of assignment Statement for structures, array of structures, nested structures, Unions; Declaring a Union, Accessing elements of a type union. MANAGING DATA FILES: Creating, Processing a file, Standard Input/Output, System Level I/O, File updating	12	16
Section-III		
INTRODUCTION TO DATA STRUCTURES: Primitive and Composite, Arrays, Matrices, Sparse Matrices, Linear Search, Binary Search, Insertion Sort, Selection Sort, Bubble Sort, String, Representation and Manipulation, Complexity of Algorithms, Records and Pointers LINKED LISTS : Introduction, Representation of Linked list in memory, Traversing, Searching, Memory Allocation, Insertions and Deletions in list, Sorted Linked List, Circular List, Header List, Two – Way List;	12	16
Section-IV		
STACKS: Introduction to stacks, Recursion, array representation of stacks, Linked and Array representation of Stacks, Push and Pop from stacks, Quicksort, Introduction to Queues, Deques, Polish Notation, Priority Queues. TREES: Binary Trees, Threaded Binary Trees, Balanced Tree, Different tree traversal algorithms, Binary Search Tree, Huffman Tree, Heap Sort, AVL Search Trees, B Trees, m-way Search Trees REPRESENTATION OF GRAPHS AND APPLICATIONS: Adjacency Matrix, Path Matrix, Warshall's Algorithm, Linked Representation of a Graph, Traversing a Graph; Sorting and Searching: Radix Sort, Merge Sort, Hashing	12	16
Total	48	64

Ops with C++		
		Total Hrs : 112 (T: 48, P: 62)
Topics	Theory (Hrs)	Practical (Hrs)
Section-I		
<p>INTRODUCTION to OOPs and C++: OOP Concepts, Top down and bottom up approaches of programming, Over view of C++: Character and string literals, Variables, Objects and their declarations, operators.</p> <p>DATA TYPES, OPERATORS AND STATEMENTS: Identifiers and Keywords, Constants (String constants, Numeric constants, Character constants), C++ Operators , Type Conversion, Statements, compound conditions, Boolean expression, nested expression.</p> <p>LOOPS AND ITERATIONS/ CONTROL STATEMENTS: While statements, do...while, for, break, continue. Conditional Expressions (if statement, if else statement), switch Statement, Loop, GoTo statement, WRITING A PROGRAM IN C++: Declaration of Variables, Statements, Simple C++ Programs, Features of iostream.h, Keyboard and screen I/O, Manipulator Functions, Predefined manipulators, Input and Output (I/O) Stream Flags.</p> <p>FUNCTIONS AND PROGRAM STRUCTURES: Function types, passing by reference, passing by constant reference, scope of functions, overloading, Defining a Function, return Statement, Actual and Formal Arguments, Local and Global Variables, Default Arguments, Multifunction Program, Storage Class Specifiers (Automatic variable, Register variable, Static variable, External variable), Recursive Function, Preprocessors (Simple macro definitions, Macro with parameters, Other Processing Techniques, Conditional Compilation), Header Files, Standard Functions.</p> <p>POINTERS AND REFERENCES: Introduction to pointers and references Pointer Declaration , Pointers ,Arithmetic and Functions, objects and values, returning a reference, new and delete operators, Pointer and one dimensional array, Pointer and multidimensional array.</p> <p>STRINGS: Strings, input output, array of strings, string related library functions</p>	16	20
Section-II		
<p>CLASSES AND OBJECTS: Introduction, class declaration constructors, destructors, polymorphism, access functions, copy constructors. Operator Overloading, conversion operators, string classes composition and inheritance</p> <p>STRUCTURES AND CLASSES: Declaration of Class, Member Functions, Defining the Object of a Class, Accessing a Member of Class, Array of Class Objects, Pointers and Classes, Unions and Classes, Classes within Classes (Nested Class), Constructors ,Destructors, Inline Member Functions, Static Class Members Friend Functions, Dynamic Memory Allocations.</p> <p>Virtual Functions: Needs, Pure virtual function, virtual destructor, virtual derivation, abstract class.</p>	12	16
Section-III		
<p>INHERITANCE: Single Inheritance, Types of Base Classes (Direct base classes, Indirect base classes), Types of Derivation (Public inheritance, Private inheritance, Protected inheritance), Ambiguity in Single Inheritance, Array of Class Objects and Single Inheritance, Multiple Inheritance (Array of class objects and multiple inheritance, Ambiguity in the multiple inheritance), Container Classes, Member Access Control (Accessing the public data, Accessing the private data, Accessing the protected data, Accessing private member by friend class).</p> <p>OVERLOADING: Function Overloading (Function overloading with various data types, Function overloading with arguments, Scoping rules for function overloading)Operator Overloading, Overloading assignment operator, Overloading of Binary Operators, Overloading arithmetic operators, Overloading of comparison operators, Overloading of Unary Operators).</p>	08	12

Section-IV		
<p>POLYMORPHISM: Polymorphism, Early Binding, Polymorphism with Pointers, Virtual Functions, Late Binding, Pure Virtual Functions, Abstract Base Classes, Constructors under Inheritance, Destructors under Inheritance, Virtual Destructors, Virtual Base class</p> <p>GENERIC PROGRAMMING & EXCEPTION HANDLING: Template functions, Template class, Exception handling features of C++.</p> <p>FILE HANDLING: Hierarchy of File Stream classes, Opening and Closing files, File modes, testing for errors, File pointers and their manipulations, ASCII & Binary files, Sequential and Random access files.</p> <p>File pointers and their manipulations, ASCII & Binary files, Sequential and Random access files</p>	12	16
TOTAL	48	64

Web Technology-I		
		Total Hrs : 112 (T: 48, P: 64)
Topics	Theory	Prac.
Section:-I		
<p>INTRODUCTION TO HTML: Information Files Creation; Web Server; Web Client/Browser, Designing a Home Page, History of HTML, HTML Generations, HTML Tags, Paired Tags, HTML Documents; Anchor Tag; Hyper Links.</p> <p>HEAD AND BODY SECTIONS: Commonly used HTML Commands , Titles and Footers; Header Section; Prologue; Links; Colorful Web Page; Comment Lines.</p> <p>DESIGNING THE BODY SECTION: Heading Printing; Aligning the Headings; Horizontal Rule; Paragraph; Tab Setting; Images and Pictures; Embedding PNG Format Images. Text Formatting Emphasizing Material in a Web Page Text Styles, Other Text Effects, Spacing. Headings in a List; Ordered Lists (Numbering); Nested Lists, Definition Lists.</p> <p>TABLE HANDLING: Tables; Table Creation in HTML; Width of the Table and Cells; Cells Spanning Multiple Rows/Columns; Coloring Cells; Column Specification. FRAMES: Frame Definition; Nested Framesets.</p> <p>Forms: Action Attribute; Method Attribute; Enctype Attribute; Drop Down List.</p> <p>ORDERED AND UNORDERED LISTS: Types of Lists; Unordered Lists Adding Graphics to HTML Documents.</p> <p>DHTML AND STYLE SHEETS: Introduction to DHTML, Defining Styles; Linking a Style Sheet to an HTML Document; In-line Styles; Internal & External Style Sheets; Internal Style Sheets; Multiple Styles.</p>	12	16
Section:-II		
<p>INTRODUCTION TO JAVASCRIPT: JavaScript in Web Pages, The Advantages of JavaScript.</p> <p>JAVASCRIPT GRAMMAR: Writing JavaScript into HTML; Building Up JavaScript Syntax; Basic Programming Techniques ,Data Types and Literal, Type Casting, Creating Variables, Incorporating variables in a Script, Variables, operators, expressions, statements, object, function and methods, Variables and Data ,The JavaScript Array, The JavaScript Array and its length Property;</p> <p>TYPES: Local variables, global variables, Data Types.</p> <p>OPERATORS: Operators and Expressions in JavaScript (Arithmetic Operators, Logical Operators, Comparison Operators, String Operators, Assignment Operators, Arithmetical & computational, Boolean, comparison, +string, assignment and special.</p> <p>STATEMENTS: If-else, do-while, while-do, for, loop, Break-Continue, switch. Conditional Checking, Super Controlled - Endless Loops ,JavaScript Programming Constructs; Functions: Defining function, Calling Function, Examples of function Functions in JavaScript.</p>	12	16
Section:-III		
<p>EVENT HANDLERS: Click, Change, Focus Blur, Mouseout, Mouseover, Select Submit, Resize, Unload, Load, Events, Alerts, Password, confirmation, Browser Detection, Redirection, Opening a new window, Placing text in a Browser; Dialog</p> <p>THE JAVASCRIPT DOCUMENT OBJECT MODEL: Objects: Document Object Model, Properties, Method Creating objects, Introduction (Instance, Hierarchy); The JavaScript Assisted Style Sheets DOM, Events Using JavaScript.</p> <p>FORMS USED BY A WEB SITE: The Form Object; The Form Object's Methods , Other Built-In Objects in JavaScript (The String Object, The Math Object, The Date Object); User Defined Objects .</p> <p>Cookies: What are Cookies; Setting a Cookie</p>	12	16
Section:-IV		
INTERFACES: Introduction; Defining Interfaces; Extending Interfaces;	12	16

<p>Implementing Interfaces; Accessing Interface Variables.</p> <p>PACKAGES: Introduction; System Packages; Using System Packages; Naming Conventions; Creating Packages; Accessing a Package; Using a Package; Adding a Class to a Package; Hiding Classes.</p> <p>REVIEW OF JAVA LANGUAGE: Introduction; Simple Java Program, More of Java, An application with Two Classes; Java Program Structure, Java Statements; Implementing a Java Program, Java Virtual Machine; Command Line Arguments; Programming Style.</p> <p>CONSTANTS, VARIABLES AND DATA TYPES: Introduction; Constants (Integer constants, Real constants, Single character constants, String constants, Backlash character constants); Variables; Data Types (Integer types, Floating point type, Character type, Boolean type); Declaration of Variables; Giving Values to Variables , Scope of Variable; Symbolic Constants ,Type Casting , Getting Values of Variables; Standard Default Values.</p> <p>OPERATORS AND EXPRESSIONS: Introduction; Arithmetic Operators Relational Operators; Logical Operators; Assignment Operators; Increment and Decrement Operators; Conditional Operators; Bit-wise Operators; Special Operators ,Arithmetic Expressions; Evaluation of Expressions; Precedence of Arithmetic Operator; Type Conversions in Expressions , Operator Precedence and Associativity; Mathematical Functions.</p> <p>MANAGING ERRORS AND EXCEPTIONS: Introduction; Types of Errors Exceptions; Syntax of Exception Handling Code; Multiple Catch Statements; Using finally Statement; Throwing Our Own Exceptions; Using Exceptions for Debugging.</p> <p>APPLET PROGRAMMING: Introduction; How Applets Differ from Applications; Preparing to Write Applets; Building Applet Code; Applet Life Cycle ,Creating an Executable Applet; Designing a Web Page ,Applet Tag; Adding Applet to HTML File; Running the Applet; More About Applet Tag; Passing Parameters to Applets; Aligning the Display; More about HTML Tags; Displaying Numerical Values; Getting Input from the User .</p> <p>GRAPHICS PROGRAMMING: Introduction; The Graphics Class; Lines and Rectangles; Circles and Ellipses; Drawing Arcs; Drawing Polygons; Line Graphs; Using Control Loops in Applets; Drawing Bar Charts.</p>		
Total	48	64

Generic Communication Skills		
	Total Hrs. : 32	
TOPICS	Presentation	Activity
ESSENTIALS OF GRAMMAR: Parts of Speech, Punctuation, Vocabulary Building, Phonetics	---	2
OFFICE MANAGEMENT: Types of Correspondence, Receipt and Dispatch of Mail, Filing Systems, Classification of Mail. ,Role & Function of Correspondence, MIS, Managing Computer	---	2
LETTER & RESUME WRITING: Types of Letters-Formal / Informal, Importance and Function, Drafting the Applications, Elements of Structure, Preparing the Resume, Do's & Don'ts of Resume, Helpful Hints	---	4
COMMUNICATION SKILLS: Verbal Communication, Non-Verbal Communication , Effective writing skills	4	---
PRESENTATION SKILLS: Importance of Presentation Skills, Capturing Data, Voice & Picture Integration, Guidelines to make Presentation Interesting, Body Language, Voice Modulation, Audience Awareness, Presentation Plan, Visual Aids, Forms of Layout, Styles of Presentation.	8	---
INTERVIEW PREPARATION: Types of Interview, Preparing for the Interviews, Attending the Interview, Interview Process, Employers Expectations, General Etiquette, Dressing Sense, Postures & Gestures	4	---
GROUP DISCUSSION & PRESENTATION: Definition, Process, Guidelines, Helpful Expressions, Evaluation	8	---