

SYLLABUS

Programming For Problem Solving

Module - 1 :

- (a) Introduction to Components of a Computer System :- Memory, Processor, I/O devices, Storage, Operating System, Concept of assembler, Compiler, interpreter & loader, linker.
- (b) Idea of Algorithm : Representation of algorithm, Flow chart, Pseudocode with examples, from algorithm to programs, Source Code.
- (c) Structure of C Programs : Writing & executing the C Programs, Syntax & logical errors in Compilation, object and executable code.
- (d) Components of C language : Standard I/O in C, fundamentals data types, Variables and Memory locations, Storage classes.

Module - 2 :

- (a) Arithmetic expression & Precedence : Operator and expression using numeric & relational operators, Mixed operands, type Conversion, logical operators, Bit operations, assignment operator, operator precedence & associativity.

(b) Conditional Branching : Applying if and else with Statement, Nesting if and else, Use of break & default in Switch Statement.

Module - 3 :

(a) Iteration and loops : Use of while, Do while & for loops, Multiple loop variables, Use of Break & Continue Statement.

(b) Function : Introduction, Types of functions, Function with array, Passing parameters to function, Call by Value, Call by reference, Recursive function.

Module - 4 :

(a) Arrays : Array notation & representation, Manipulating array elements, Using multidimensional arrays, Character arrays & strings, Structure, Union, Numerated data types, array structures, Passing arrays to function.

(b) Basic Algorithms : Searching & Basics, Sorting algorithm (Bubble, insertion & Selection), finding roots of equation, notion of order of Complexity.

Module - 5 :

(a) Pointers : Introduction, Declaration, Application, Introduction to dynamic memory allocation (MALLOC, CALLOC, REALLOC, FREE), Use of pointers in self-referential