SYLLABUS
PROBLEM SOLVING IN C

UNIT I

General Fundamentals: Introduction to computers: Block diagram of a computer, characteristics and limitations of computers, applications of computers, types of computers, computer generations.

Introduction to Algorithms and Programming Languages: Algorithm - Key features of Algorithms, Flow Charts, Programming Languages - Generations of Programming Languages - Structured Programming Language- Design and Implementation of Correct, Efficient and Maintainable Programs.

UNIT II

Introduction to C: Introduction - Structure of C Program - Writing the first C Program -File used in C Program - Compiling and Executing C Programs - Using Comments - Keywords - Identifiers - Basic Data Types in C - Variables - Constants - I/O Statements in C- Operators in C- Programming Examples.

Decision Control and Looping Statements: Introduction to Decision Control Statements- Conditional Branching Statements - Iterative Statements - Nested Loops - Break and Continue Statement - Goto Statement

UNIT III

Arrays: Introduction - Declaration of Arrays - Accessing elements of the Array - Storing Values in Array- Operations on Arrays - one dimensional, two dimensional and multi-dimensional arrays, character handling and strings.

UNIT IV

Functions: Introduction - using functions - Function declaration/ prototype - Function definition - function call - return statement - Passing parameters - Scope of variables - Storage Classes - Recursive functions.

Structure, Union, and Enumerated Data Types: Introduction - Nested Structures - Arrays of Structures - Structures and Functions- Union - Arrays of Unions Variables - Unions inside Structures - Enumerated Data Types.

UNIT V

Pointers: Understanding Computer Memory - Introduction to Pointers - declaring Pointer Variables - Pointer Expressions and Pointer Arithmetic - Null Pointers - Passing Arguments to Functions using Pointer - Pointer and Arrays - Memory Allocation in C Programs - Memory Usage - Dynamic Memory Allocation - Drawbacks of Pointers

Files: Introduction to Files - Using Files in C - Reading Data from Files - Writing Data to Files - Detecting the End-of-file - Error Handling during File Operations - Accepting Command Line Arguments.