

## **C PROGRAMMING & DATA STRUCTURES**

<b>Topics</b>	<b>Page No.</b>
<b>UNIT-I</b>	
<b>Introduction to C Language –</b> C language elements, variable declarations and data types, operators and expressions, decision statements - If and switch statements, loop control statements - while, for, do-while statements, arrays.	1 - 19
<b>UNIT-II</b>	
Functions, types of functions, Recursion and argument passing, pointers, storage allocation, pointers to functions, expressions involving pointers, Storage classes – auto, register, static, extern, Structures, Unions, Strings, string handling functions, and Command line arguments.	20 - 43
<b>UNIT-III</b>	
<b>Data Structures,</b> Overview of data structures, stacks and queues, representation of a stack, stack related terms, operations on a stack, implementation of a stack, evaluation of arithmetic expressions, infix, prefix, and postfix notations, evaluation of postfix expression, conversion of expression from infix to postfix, recursion, queues - various positions of queue, representation of queue, insertion, deletion, searching operations.	44 – 53
<b>UNIT-IV</b>	
<b>Linked Lists –</b> Singly linked list, dynamically linked stacks and queues, polynomials using singly linked lists, using circularly linked lists, insertion, deletion and searching operations, doubly linked lists and its operations, circular linked lists and its operations.	54 – 60

UNIT-V	
<p><b>Trees –</b>  Tree terminology,  representation,  Binary trees, representation,  binary tree traversals.  Binary tree operations,</p> <p><b>Graphs –</b>  graph terminology,  graph representation,  elementary graph operations,  Breadth First Search (BFS) and Depth First Search (DFS),  connected components,  spanning trees.</p> <p><b>Searching and Sorting –</b>  sequential search, binary search,  exchange (bubble) sort,  selection sort,  insertion sort.</p>	61 – 79