DCS-401 DATA STRUCTURES WITH "C"

Detailed Syllabus

Unit-1 Introduction: Basic Terminology, Elementary Data Organization, Structure operations, Algorithm complexity. Arrays: Array Definition, Representation and Analysis, Single and Multidimensional Arrays, application of arrays.

Unit– 2 Stacks: Implementation of stack, Operations on Stacks: Push & Pop, Application of stack: Conversion of Infix to Prefix and Postfix Expressions, Evaluation of postfix expression using stack. Queues: Array implementation of queues, Operations on Queue: Create, Add, Delete.

Unit – 3 Linked list: Representation and Implementation of Singly Linked Lists, Traversing and Searching of Linked List, Overflow and Underflow, Insertion and deletion to/from Linked Lists.

Unit-4 Trees: Basic terminology, Binary Trees, Binary tree representation, Tree traversal (pre-order, post-order and in-order).

Unit – 5 Searching and Hashing: Sequential search, binary search, comparison and analysis, Concept of Hashing. Sorting: Algorithms and their analysis- Insertion Sort, Bubble Sort, Quick Sort, Merge Sort.