

II BCA – III SEMESTER

DATA STRUCTURES AND ALGORITHMS

UNIT-I :

Definition of a data structure-primitive and composite data types, Arrays, Operations of arrays, Order lists.

UNIT-II :

Stacks-application of stack- Infix to postfix conversion, Recursion, Maze problems- Queue- Operation of queues, Queue applications, Circular queue.

UNIT-III :

singly linked list- Operations, Application- Representation of a polynomial, Polynomial Addition; Doubly linked list- Operations, Applications- Ordering of books in library (Alphabetical ordering).

UNIT-IV :

Trees and graphs: Binary trees- Conversion of forest to binary tree, Operations- Tree traversals; Graph- Definition, Types of graphs, Traversal (BFS & DFS) - Dijkstra's algorithm.

UNIT-V :

algorithm- Definition- Examples - Divide and conquer- Binary search-Maximum and minimum- Merge sort.

References :

1. E.Horowitz and S.Shani Fundamental of data structures in c++, Galgotia pub. 1999.
2. Horowitz, S.Shani and S.Rajasekaran, Computer algorithms, Galgotia pub. Pvt. Ltd 1998.
3. R.Kruse C.L.Tondo and B.Leung, Dtastructures and program design in C, PHI, 1997.