Roll No. ....   Total Pages : 2

BT-3/D-21   **43132**

DATA STRUCTURE AND ALGORITHMS
Paper-PC-CS201A

Time : Three Hours]   [Maximum Marks : 75

Note : Attempt any *five* questions by selecting at least *one* question from each unit.

UNIT–I

1. (i) Differentiate between linear and non linear data structures with example.   (8)

    (ii) Differentiate Recursive and Non recursive binary Search.   (7)

2. (i) Differentiate between linear and searching algorithm.   (8)

    (ii) Discuss various steps involved in Bubble sort with suitable example.   (7)

UNIT–II

3. (i) Write algorithm to insert and delete elements in stack.   (8)

    (ii) Discuss various steps involved in Priority queue. (7)

4. (i) Write prefix and postfix expression for $(A - B/C + E)/(A + B)$.   (8)

    (ii) Discuss various applications of stack and queue. (7)

43132/00/KD/364   [P.T.O.

UNIT–III

5.   (i)   Write algorithm for insert and delete an element from a linked list.   (8)

     (ii)   How stack and queue are dynamically implemented.   (7)

6.   (i)   Write algorithm insert and delete elements in doubly link list.   (8)

     (ii)   Differentiate Static and dynamic implementation of link list.   (7)

UNIT–IV

7.   (i)   Write properties of AVL tree. Make an AVL tree having elements 5, 10, 20, 30, 40, 45, 50, 60 and 70.   (8)

     (ii)   Write algorithm to traversal in a binary tree with example.   (7)

8.   (i)   Compare Prim's and Kruskal's algorithm with suitable example.   (8)

     (ii)   Write algorithm for balanced multi way search trees.   (7)