BT-3/D-23   43169

DATA STRUCTURES
PC-IT-205A

Time : Three Hours]   [Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) What is difference between structure and Matrix ?   **5**

   (b) Write a program to implement Bianry search and explain it with the help of an appropriate example.

   10

2. Write an algorithem of insertion sort and explain it with the help of an approporiate example.   **15**

Unit II

3. What are different steps to convert infix expression to postfix expression ? Convert exp = "$a + b * c + d$" into postfix expression.   **15**

4. What do you mean by Polish notation ? Also explain and implement Circular Queue and its applications. **5+3+5+2**

Unit III

5. What are different applications of Dynamic structure ? Write an program to implement Stack using linked list.

15

6. What do you mean by dubly linked list ? Write a program to implement insertion at first position, at any point and at last position in doubly linked list. **15**

Unit IV

7. What do you mean by Binary tree ? Write an algorithm to display binary tree of expression $X = 3 + ((5 + 9) * 2)$ and show inorder travesal. **15**

8. What is AVL tree and threaded tree ? Write an algorithm to insert a node in AVL Tree. **15**