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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. What is Array ? Also write lower bound and upper bound for one dimension and two dimension array. Write an algorithm to transpose M × N matrix. 15

2. What is difference between selection sort and insertion sort ? Write an algorithm to implement insertion sort with example. 15

Unit II

3. What are the applications of Stack in real life ? Write an algorithem to convert Infix statements to Postfix statements by taking an appropriate example. 15

4. What is difference between Linear Queue and Circular Queue ? Write an algorithem to implement Insertion and Deletion in a Circular Queue. 15

Unit III

5. What is the need of dynamic data structure ? Write an algorithm to implement Queue creation and insertion using linked list. **15**

6. What is double linked list and its advantages over single linked list ? Write an algorithm to implement insertion and deletion in double linked list. **15**

Unit IV

7. Define Trees, Internal node and external node in brief. Write an algorithm to implement Inorder and Postorder traversal in an binary tree. **15**

8. What is the difference between trees and graph ? Also explain minimum spanning tress with the help of example in detail. **15**

EXAMKIT