Roll No. _____

Total Pages : 2

8503

BT-3/D05

DATA STRUCTURES(Common with CO, IT)

(According to Syll. De., 04)

PAPER - CSE-203E

Time : 3 Hrs.   Maximum Marks : 100

Note : Attempt any five questions.

1. a. Define Array and its Types. How they are represented into computer memory ?   5

   b. Write a Algorithm to convert infix expressin into postfix and also explain it by taking the example :

   $(A + B) * D + E / (F + A * D) + C$ 15

2. a. Write a C program to implement the stack operations. 12

   b. Write a C program to search a element into a two-dimensional array.   8

3. a. Discuss the advantages and disadvantages of linked list over array.   5

   b. Explain priority queue and its advantages.   5

   c. Explain circular queue. Also write the Algorithm for deletion of an element from circu'ar queue.   10

4. Write algorithms in insert, delete and search an element from Queue which is implemented using doubly linked list.   20

5. a. Discuss Threads Trees. What are the advantages of threaded tree explain with example ?   8

   b. What is Binary tree ? What are the various methods to traverse a binary tree ? Explain them with examples.

(3th sem. Electronic+ Math/Eco.)   62

Write an algorithm of any one method.   12

6. a. Define the terms :-

   (i) Degree of a Tree

   (ii) Height of a Tree

   (iii) External and Internal modes   1+2+2

   b. Write short notes on :-

   (i) Binary search tree

   (ii) AVL Tree

   (iii) B^+ Tree $3 \times 5 = 15$

7. a. Explain the various techniques to represent the Graph in Computer memory.   5

   b. Define Graph ? Write BFS Traversal Algorithm for traversing a graph and also explain it with an example. 5

8. a. What is hash function ? When the perfect hashing function are feasible ?   5

   b. Explain the quick sort technique by using the list :

   12 26 57 48 37 92 86 33   15

(3th sem. Electronic + Math/Eco.)   63