

Roll No.

Total No. of Pages : 2

BT-3/D11

7602

Data Structures

Paper : CSE-203 E

Time : Three Hours]

[Maximum Marks : 100

Note :- Attempt FIVE questions in all, selecting at least ONE question from each Unit.

UNIT-I

1. (a) Define Abstract Data Type (ADT). Differentiate between static Implementation and dynamic Implementation of Data Structure. 10
- (b) What is a two-dimensional Array ? How it is stored in memory ? Differentiate it with structure. 10
2. (a) What is stack ? Write push and pop routines for statically implemented stack. 10
- (b) Write an algorithm to evaluate post-fix expression with an example. 10

UNIT-II

3. (a) Write the algorithms for Insertion and deletion performed on the linear queue when queue is implemented as dynamic. 10
- (b) What are priority queue ? Discuss application of priority queue. 10
4. Write an algorithm to perform following operations :-
 - (a) To Traverse a linked list
 - (b) To search an element from a linked list
 - (c) To append an element to the end of linked list. 20

UNIT-III

5. (a) Write down the non-recursive algorithm for In-order traversal of binary tree. 10
- (b) Write an algorithm to delete a node with two children from a Binary Search tree. <http://www.kuonline.in> 10
6. Write short notes on any two of the following :-
 - (a) Balanced Multiway Search Tree
 - (b) AVL-Tree
 - (c) Threaded Tree. 20

UNIT-IV

7. (a) What is graph ? Explain various representation method used for graphs. 10
- (b) What is meant by traversal of graph ? Discuss depth first traversal technique with an example. 10
8. (a) What is Hashing ? What is the condition for collision ? How collision can be resolved ? 10
- (b) Write the algorithm for Insertion Sort. How many key comparison are made in its worst case ? 10