Roll No. .....
Printed Pages : 2

1230

BCA / D-18

DATA STRUCTURE

Paper-BCA-232

Time allowed : 3 hours] *[Maximum marks : 80*

Note : *A candidate will be required to answer **five** questions in all, selecting **one** question from each unit in addition to compulsory **Question no. 1.***

(Compulsory Question)

1. (a) What is the difference between Full Binary tree and Binary tree ?

   (b) Explain the concept of Priority Queue.

   (c) Differentiate between Data Type and Data Structure.

   (d) Explain overflow and underflow condition.

Unit–I

2. (a) Define Data Structure. Explain the categories of data structure. 8

   (b) How we can calculate the complexity of an algorithm and time space trade off ? 8

3. (a) What are Strings ? Explain the various methods to store strings in memory with an example.

   (b) Explain Second Pattern Matching Algorithms by giving example ? 16

Unit-II

4. (a) How a two dimensional array represents in memory ? Explain with examples. 8

   (b) M is a two dimensional array with 10 rows and 10 columns i.e. M [1:10,1:10]. 8

5. What is Linked Lists ? How it represents in memory with example ? Write an algorithm for traversing a linked list ? 16

Unit-III

6. (a) What is Stack ? Explain the operations on Stack ? 10

   (b) Evaluate the following Postfix Expression

   E= 8, 7, 20, *, 15, 3, /, - 6

7. (a) What is Recursion ? Write the recursive and iterative algorithm for finding the factorical of a number N. 8

   (b) What is Queue ? Write an algorithm to delete an element in the queue. 8

Unit-IV

8. What is Graph ? How it is represented in Memory ? 16

9. What is Tree Traversal ? Explain all the tree traversal algorithm using the concept of recursion. 16