BCA / D-19
DATA STRUCTURES
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. All questions carry equal marks.*

Compulsory Question

1. (a) What is algorithm complexity ? Give brief overview.   4

     (b) Differentiate between array and linked list.   4

     (c) What are the differences between stack and queue ? Explain.   4

     (d) What is the difference between general tree and binary tree? Explain.   4

Unit–I

2. Define Data Structure. Explain various types/categories of data structures with suitable examples.   16

3. (a) Explain various types of data structure operations. Give suitable examples also.   8

     (b) Define string. Explain various types of string operations. 8

Unit–II

4. How 1-D and 2-D arrays are stored in the main memory of the computer ? Elaborate on traversing linear array with suitable example.   16

5. Explain the representation of linked list in main memory of the computer. Elaborate on the concept of insertion and deletion of an element in one-way linked list with suitable example.   16

Unit–III

6. Explain various operations on stack along with suitable examples.   16

7. Explain array and linked representation of queue with suitable examples.   16

Unit–IV

8. Explain the concept of traversing binary tree with suitable examples.   16

9. Define graph. Explain sequential and linked representation of graph in the main memory along with suitable examples.   16

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