

3-4-108

THREE YEAR B.Sc. (CBCS) DEGREE EXAMINATION — NOVEMBER/DECEMBER 2020
FOURTH SEMESTER

Part II — Computer Science

Paper I — DATA STRUCTURES

(w.e.f. 2016 – 2017)

Time : 3 hours

Max. Marks : 75

SECTION - A

Answer any FIVE of the following questions.

All questions carry equal marks.

(Marks : $5 \times 5 = 25$)

1. Write a short note on Linear and Non-linear data structures.
2. Write a short note on Sparse Matrices.
3. Explain various applications of Stack data structure.
4. Write a short note on Priority Queues.
5. Write a short note on Binary Search Tree.
6. What are Threaded Binary Trees?
7. Write a short note on Minimum Spanning Tree.
8. Write algorithm for Insertion Sort.

SECTION - B

Answer ONE question from each unit.

All questions carry equal marks.

(Marks : $5 \times 10 = 50$)

UNIT I

9. What is a Single Linked List? Explain basic operations on Single Linked List.

Or

10. Define Array ADT. Explain any four operations on Array ADT.

[P.T.O.]

UNIT II

11. What is Stack? Explain the primitive operations of Stacks with algorithms.

Or

12. Explain Linked list representation of Queue data structure.

UNIT III

13. Explain the array representation of Binary Trees.

Or

14. Explain various types of Binary Tree traversals with examples.

UNIT IV

15. Explain various Graph traversals with examples.

Or

16. Explain the Linked representation of Graph.

UNIT V

17. Write a program to perform Bubble sort a given array of n elements.

Or

18. Explain Binary Search with help of an example.
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