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Name: ....

Reg.No: ....

FIRST SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2025
(CBCSS - PG)

(Regular/Supplementary/Improvement)

CC19PCSS1C02 - ADVANCED DATA STRUCTURES
(Computer Science)

(2019 Admission onwards)

Time : 3 Hours

Maximum : 30 Weightage

Part-A

Answer any *four* questions. Each question carries 2 weightage.

1. Define Algorithm. What are the qualities of a good algorithm

2. What is Sparse matrix ? How is it implemented using array.

3. Explain Bubble sort with example. Also mention complexities.

4. Explain working of binary search

5. Explain Tower of Hanoi using recursion.

6. Differentiate between Double hashing and extended hashing

7. Illustrate data organization in skip list

(4 × 2 = 8 Weightage)

Part-B

Answer any *four* questions. Each question carries 3 weightage.

8. Explain categories of Data Structure and operations performed on each.

9. Discuss permutation and combination in counting.

10. Explain double ended queue and its operations.

11. Explain binary tree and its operations.

12. With examples explain any two shortest path algorithm.

13. Explain heap and how it is implemented.

14. Analyse Binary heap and skew heap.

(4 × 3 = 12 Weightage)

Part-C

Answer any *two* questions. Each question carries 5 weightage.

15. Explain the concept of Double linked list and the operations performed on it.

16. Give note on (a) Threaded binary tree (b) Red Black Tree (c) Treaps

17. Explain hashing in DS .what are the collision resolution techniques used in it.

18. Explain (a) Min -Max heap (b) Binary heap (c) Skew heap

(2 × 5 = 10 Weightage)

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