FIRST SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

(CBCSS - PG)

(Regular/Supplementary/Improvement)

CC19P CSS1 C02 - ADVANCED DATA STRUCTURES

(Computer Science)

(2019Admission onwards)

Time : 3 Hours   Maximum : 30 Weightage

Part-A

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

1. What is ADT? Explain with examples.

2. What are the different counting technique used?

3. How is linear search performed?

4. Define a NODE in a linked list.Explain any two operations performed on single linked list.

5. Evaluate (A+B)^C-(D*E)/F) to postfix and prefix using stack.

6. What is heap? Explain steps to build a min/max heap.

7. Explain skew heaps with example.

(4 × 2 = 8 Weightage)

Part-B

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

8. Explain Time complexity and space complexity of algorithms.

9. Explain sparse matrix write algorithm for representing sparse matrix in memory using array.

10. Explain double ended queue and its operations.

11. Explain binary search tree and its operations.

12. Explain Tries and operations performed on it.

13. Define hash table, hash function, and discuss different hash functions.

14. Analyse Fibonacci heaps and binary heaps.

(4 × 3 = 12 Weightage)

Part-C

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

15. Explain any five sorting algorithms.

16. Explain concept of graph and its usage in Data Structure.

17. Give short note on (a) Open chaining (b) Rehashing (c) Double hashing (d) Quadratic probing

18. Give short note on (a) Deaps (b) Leftist heap (c) Binomial heaps

(2 × 5 = 10 Weightage)

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