QP CODE: 22002583

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Reg No : .....

Name : .....

MSc DEGREE (CSS) EXAMINATION , NOVEMBER 2022

Second Semester

M.Sc. ARTIFICIAL INTELLIGENCE

CORE - AI010204 - DATA STRUCTURES AND ALGORITHM ANALYSIS

2019 Admission Onwards

66F19C98

Time: 3 Hours Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. What is information?
2. Define Array?
3. What are the problems with array compared to linked list?
4. Differentiate between directed and undirected graph.
5. Which algorithm is best for searching?
6. Mention the process hashing.
7. Describe Knapsack problem.
8. What are the applications of a spanning tree?
9. Mention the applications of dynamic programming.
10. What is an N-queen problem?

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Explain the different asymptotic notations.
12. How a new node is inserted at the end of doubly Linked List?
13. What is tree traversal? Explain.
14. Explain insertion sort with example.

15. Explain merge sort with example.

16. How does greedy algorithm works? Explain.

17. Briefly describe backtracking algorithm.

18. Compare branch and bound and backtracking.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Write and explain the algorithm to evaluate postfix expression with example.

20. Explain AVL Tree and its rotations in detail.

21. Explain and compare detail a) Selection sort b) insertion sort.

22. Write and explain the algorithm to find the minimum and maximum using divide and conquer method.

(2×5=10 weightage)