D 122480 **(Pages : 2)** **Name.....**

Reg. No.....

SECOND SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY) EXAMINATION, APRIL 2025

(CBCSS)

Computer Science

CSS 2C 06—DESIGN AND ANALYSIS OF ALGORITHMS

(2019 Admission onwards)

Time : Three Hours Maximum : 30 Weightage

Section A

Answer any **four** *questions.*

Each question carries 2 weightage.

1. Define string processing.
2. Mention any *two* advantages of using brute force approach.
3. Explain any *two* algorithm control structure.
4. Write about travelling salesman problem.
5. What is parallel processing algorithm ?
6. Distinguish between Little Omega and big Omega.
7. Define matrix multiplication.

(4 × 2 = 8 weightage)

Section B

Answer any **four** *questions.*

Each question carries 3 *weightage.*

8. Describe in detail about binary search tree with an example.
9. Explain longest common subsequence with an example.
10. Illustrate Big O Ratio theorem.
11. Define NP complete problem.

Turn over

12. Write a note on deterministic symmetry breaking.

13. How to calculate the time complexity in parallel algorithm ?

14. Difference between parallel merging and parallel sorting.

(4 × 3 = 12 weightage)

Section C

Answer any **two** *questions.*

Each question carries 5 *weightage.*

15. Elucidate geometric problem and numerical problem.

16. How to solve recurrences using tree method ?

17. Discuss in detail about NP completeness reductions for Hamiltonian cycle.

18. Determine parallel prefix computation.

(2 × 5 = 10 weightage)