SECOND SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2023
(Regular/Improvement/Supplementary)

COMPUTER SCIENCE
FCSS2C06-DESIGN AND ANALYSIS OF ALGORITHMS

Time: 3 Hours   **Maximum Weightage: 30**

Section A: Short answer questions. Answer any *four* questions. Each carries 2 weightage.

1.   Enumerate the features for analyzing parallel algorithms.

2.   Write the method to solve problems using Greedy method.

3.   Give an account on the merits of cost estimation based on key operations.

4.   What are P problems?

5.   List out any two combinatorial problems in detail.

6.   Define Master's Theorem.

7.   What are the methods of specifying algorithms? Illustrate procedure for checking first N prime numbers in any three methods.

(4 × 2 = 8 weightage)

Section B: Short essay questions. Answer any *four* questions. Each carries 3 weightage.
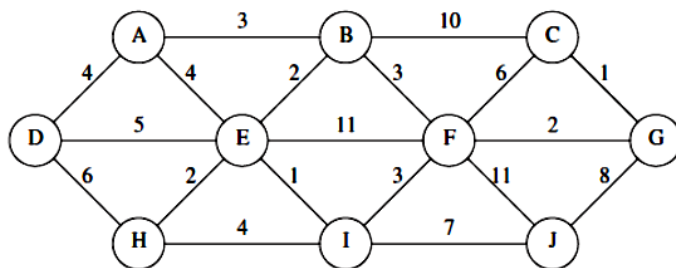
8.   Enumerate various factors considered during the designing of algorithms.

9.   With an example, explain how to solve Knapsack problem using Branch and Bound technique.

10.   Give an account on Strassen's matrix multiplication.

11.   What is Amdahl's Law?

12.   What are NP complete problems? How we can show a problem is NP complete.

13.   Compare and contrast various computational models.

14.   Illustrate with an example, parallel prefix computation.

(4 × 3 = 12 weightage)

(P.T.O.)

Section C: Essay questions. Answer any *two* questions. Each carries 5 weightage.

15. Explain in detail about Deterministic Symmetry breaking.

16. What is Dynamic programming approach? With an example explain Longest Common Sequence problem.

17. How to solve recurrence relation using Recursion Tree Method.

18. What is Prim's algorithm? How to calculate its complexity? Find the minimum Spanning Tree of the following graph using Prim's algorithm.

(**2 × 5 = 10 weightage**)