

21P259

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Name:

Reg.No:

SECOND SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2022

(CBCSS - PG)

(Regular/Supplementary/Improvement)

CC19P CSS2 C06 - DESIGN AND ANALYSIS OF ALGORITHMS

(Computer Science)

(2019 Admission onwards)

Time : 3 Hours

Maximum : 30 Weightage

Part-A

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

1. List a note on sorting and searching problems.
2. Illustrate the purpose of Prim's algorithm.
3. Demonstrate how the branch-and-bound technique is used to solve 0/1 knapsack problem.
4. Assess Big-Oh Ratio Theorem.
5. Defend Iteration method.
6. Discuss spanning tree. Give an example.
7. Examine in detail about Parallel prefix computation.

(4 × 2 = 8 Weightage)

Part-B

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

8. Recite PRAM model in detail
9. Demonstrate the advantages of Merge sort.
10. Demonstrate the backtracking designing technique.
11. Prioritize between Time and Space Complexity.
12. Criticize the working of Strassen's matrix multiplication with the help of divide and conquer method.
13. Explain complexity classes.
14. Examine time complexity, cost, number of processors, space complexity and speed up in parallel algorithm analysis.

(4 × 3 = 12 Weightage)

Part-C

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

15. Define algorithm and recite different steps in developing an algorithm. List different properties of algorithm.
16. Illustrate the essential idea of Dynamic Programming. How does Dynamic Programming differ from backtracking? Explain longest common subsequence problem using dynamic programming.
17. Justify the importance of asymptotic notations in algorithm analysis.
18. Criticize recursion tree and master's theorem for solving recurrence equations.

(2 × 5 = 10 Weightage)
