



'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL
BCA Honours 6th Semester Examination, 2023

CC14-BACHELOR OF COMPUTER APPLICATION (62)
DESIGN AND ANALYSIS OF ALGORITHM

Time Allotted: 2 Hours

Full Marks: 40

GROUP-A

Answer any *five* of the following

1×5 = 5

1. What is tail recursion?
2. What is worst case time complexity of merge sort algorithm?
3. What do you mean by greedy programming technique?
4. Define Big oh(O) notation of complexity.
5. What types of data structure are used in the BFS and DFS algorithm?
6. Why do we need to study minimum spanning tree?
7. What do you mean by P complexity class?

GROUP-B

Answer any *three* of the following

5×3 = 15

8. Explain graph coloring problem.
9. Describe Breadth-First Search of graph traversal algorithm.
10. Write greedy algorithm for solving 0/1 Knapsack problem.
11. Write Prim's algorithm for minimum spanning tree.
12. Explain difference between dynamic programming approach and greedy approach.

GROUP-C

Answer any *two* of the following

10×2 = 20

13. Write down Kruskal's algorithm for finding minimum spanning tree. Give an example.
14. Write Binary search algorithm using Divide and conquer approach.
15. Write down matrix chain multiplication algorithm using dynamic programming.
16. Write a short note on travelling salesman problem.

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