

NOVEMBER/DECEMBER 2020

**BSCA34 — DESIGN AND ANALYSIS OF
ALGORITHMS**

Time : Three hours

Maximum : 75 marks

SECTION A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define the term – Flow chart.
2. What is “Big – O” notation?
3. Define the term Merge sort.
4. Mention the purpose of partition algorithm.
5. What are weighted trees?
6. Define the term – Minimum – cost Spanning Tree?
7. What is ‘Principle of optimality’?
8. Define the Traveling salesperson problem.
9. What is Binary tree?
10. Define the term – Backtracking.

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Discuss on Recursive algorithms.
Or
(b) Write a short note on Primality testing.
12. (a) Explain the algorithm for Straight forward maximum and minimum.
Or
(b) Give an overview on Selection sort.
13. (a) Explain the concept of Tree vertex splitting.
Or
(b) Discuss on Single Source Shortest paths algorithm.
14. (a) Describe the All pairs shortest path problem.
Or
(b) Write a short note on Reliability design.
15. (a) Explain the Depth first search and Traversal technique for graphs.
Or
(b) Give an overview on Graph coloring.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the Time complexity with an example.
 17. Discuss on Binary search algorithm.
 18. Describe the Prim's algorithm.
 19. Write a detailed note on 0/1 knapsack problem.
 20. Explain the concept of Hamiltonian Cycles with examples.
-