

203224/2008

C-9101

Register Number:

Name of the Candidate:

M Sc. DEGREE EXAMINATION, DECEMBER 2022

(FOR AFFILIATED COLLEGES)

(NEW REGULATION 2022 ONWARDS)

COMPUTER SCIENCE

FIRST YEAR - FIRST SEMESTER

22PCSCC11 DESIGN AND ANALYSIS OF ALGORITHMS

Time : 3 Hours

Maximum : 75 Marks

10 x 2 = 20 Marks

PART - A

Answer All Questions

1. Define Space Complexity
2. What is Binary Tree?
3. List out some example of divide and conquer methods.
4. What is the use of Quick sort?
5. Give some application of Binary trees.
6. What is Spanning tree?
7. Define Multistage graph.
8. What is String editing?
9. Define Back tracking.
10. What do you mean Hamiltonian cycles?

PART - B

5 x 5 = 25 Marks

Answer All Questions

11. a) Write short notes on Time complexity with an example.
[OR]
- b) Explain in detail about Union and find operation in sets with Example.
12. a) Write down the Merge sort algorithm and explain it with Example.
[OR]
- b) Discuss in detail about Strassen's matrix multiplication algorithm with example.
13. a) Illustrate in detail about Tree vertex splitting algorithm with example.
[OR]
- b) Describe about the Single Source Shortest path.
14. a) Write short notes on post order traversal in graph with example.
[OR]
- b) Discuss in detail about the Optimal Binary search tree with example.

15. a) Explain in detail about the sum of subsets with example.

[OR]

b) Write short notes on Cost search algorithm with example.

PART - C

Marks: 3 x 10 = 30

(Answer Any Three Questions)

16. Discuss in detail about insertion and deletion from Binary search tree with example
17. Describe in detail about finding the maximum and minimum with example.
18. Explain in detail about Kruskal algorithm of Minimum cost spanning tree with example..
19. Narrate the concept of Techniques for graph with example.
20. Summarize in detail about the back tracking solution to the 0/1 knapsack problem.