



Register Number:

Date:

ST. JOSEPH'S COLLEGE (AUTONOMOUS), BANGALORE-27

M.Sc. - I SEMESTER

SEMESTER EXAMINATION : OCTOBER 2018

CS7318: DESIGN AND ANALYSIS OF ALGORITHMS

Time- 2.5 hrs

Max Marks-70

This paper contains 2 printed page and 1part

Answer any SEVEN questions

7x10=70

1. What are Asymptotic Notations? Explain the different types of notations with suitable examples.

2. a. What do you mean by Non Deterministic problems?

b. Explain Dijkstra's Algorithm with a relevant example.

[3+7]

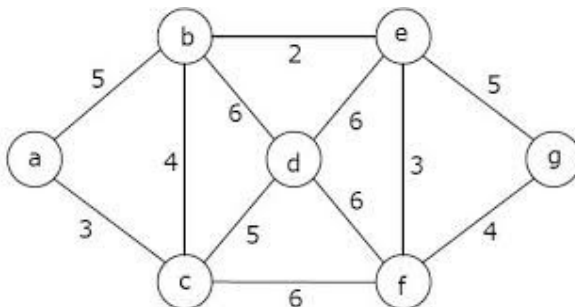
3. Analyze Recursive Binary Search Algorithm with respect to time complexity.

4. Illustrate Quick Sort Algorithm with the following numbers.

45 , 5 , 98 , 34 , 55 ,92 and 6

5. Consider a Knapsack problem where $n=4$, capacity $M=40$, weights $(w_1, w_2, w_3, w_4)=(20, 25, 10, 15)$ and profits $(p_1, p_2, p_3, p_4)=(20, 40, 35, 45)$. Find the feasible solutions and optimal solution. Find the maximum profit earned.

6. Obtain the minimum cost spanning tree using Kruskal's Algorithm for the following graph.



7. Explain 8 queen's problem with a suitable example.
8. a. Define Live Nodes and Dead Nodes.
b. Write short notes on Job Sequencing with deadlines [4+6]
9. Explain Breadth First Search (BFS) with relevant examples.
