Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

MCA-404

M.C.A. IV Semester

Examination, June 2020

Design and Analysis of Algorithms

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Explain Divide and conquer technique using this technique sort the following list of number:

   A = {3 15 2 25 36 14 24) 7

   b) What is binary search technique? Explain. 7

2. a) Explain quick sort algorithm and find its complexity in average case. 7

   b) Define binary tree explain the difference between complete binary tree and full binary tree. 7

3. a) Explain Greedy method. What are the general properties of Greedy methods? 7

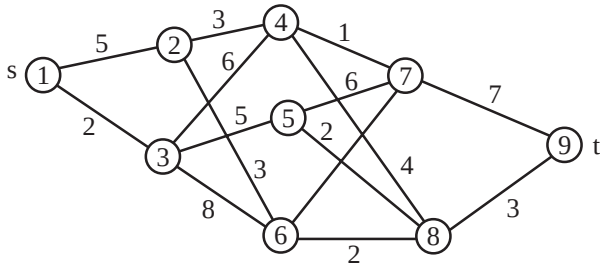
   b) What is minimum spanning tree? Explain by taking an example. 7

4. Explain 8 queens problem and write an algorithm using back tracking to solve this problem. 14

5. a) Discuss various Graph traversal schemes. 7

   b) What are the advantages and disadvantages of BFs and DFs? 7

6. Find a minimum cost path from's to t in a multistage graph using dynamic programming. 14



7. a) Explain Prims algorithm to get minimum cost spanning tree and give its complexity. 7

   b) Explain travelling salesperson problem. 7

8. Write short notes on any three. 14

   a) Algorithm and its characteristics

   b) Space complexity

   c) Time complexity

   d) Recursion and its types

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