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

Roll No .....

MCADD-601

M.C.A. (Dual Degree/Integrated Course)
VI Semester

Examination, May 2018

Analysis Design and Algorithm

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) What is the time complexity of the algorithm. Determine time complexity of Fibonacci Series.
   b) Illustrate the Bigot, Theta and Omega asymptotic notations graphically and explain.

2. a) Explain divide and conquer Algorithms.
   b) Compare the time complexity and space complexity of quick sort algorithms.

3. a) List the characteristics of Greedy algorithms.
   b) Explain Travelling salesman problem in Branch and Bound Methods.

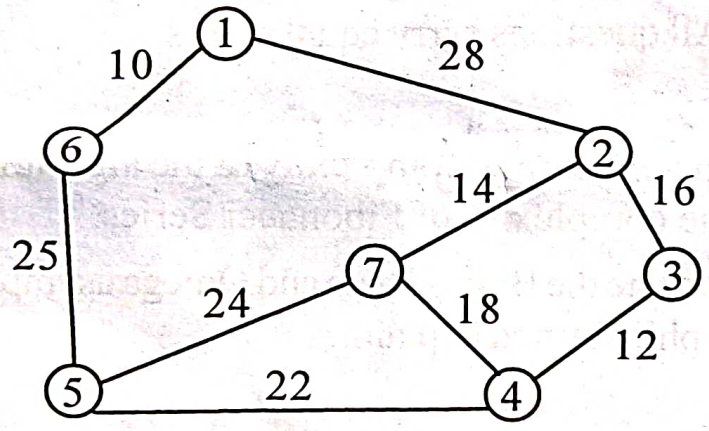
4. Explain the concept of Back Tracking and Branch and Bound Technique with suitable example.

5. a) What is Knapsack problem? Describe how it can be solved using dynamic programming. Give suitable example.

   b) What is 8 queen problem? How to solve this by using Back Tracking? Discuss with example.

6. What are P and NP problems? Give atleast five problem that can be classified as NP problem. Discuss the approximation algorithms for NP hard problem.

7. Apply Prim's and Kruskal's Algorithm to the following Graph. Write their time complexity. Find the minimum cost in each case.



8. Write short notes (any three):
   a) Computational Complexity
   b) Dynamic Programming
   c) Searching Algorithm
   d) Traversal Methods

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