

MCADD-601**M.C.A. (Integrated) VI Semester**

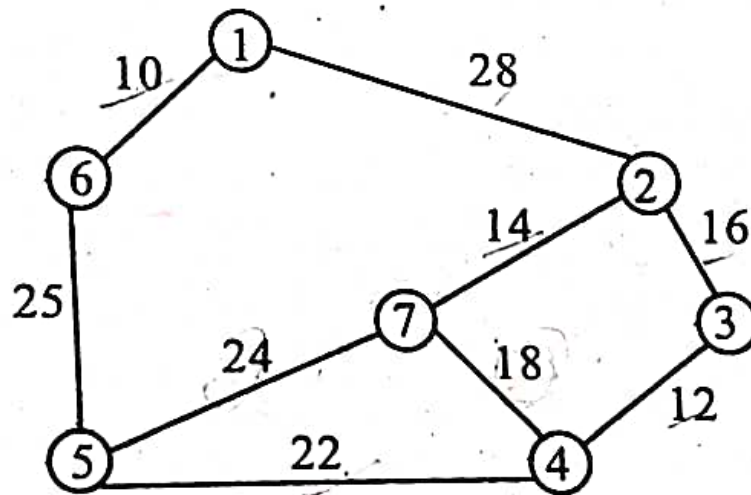
Examination, May 2022

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) What is divide and conquer technique? Using quick sort algorithm arrange the following array in ascending order. 36, 95, 42, 12, 08, 66, 72, 55.
b) Differentiate between depth first and breadth first search algorithm. *S=0*
3. a) List the characteristics of Greedy algorithms.
b) Explain Travelling salesman problem in Branch and Bound Methods.
4. Explain following terms:
i) FIFO Branch and Bound *killed node*
ii) O/I Knapsack problem

5. a) Differentiate between divide and conquer and dynamic programming.
b) Determine an LCS of (A, B, C, D, B, A, C, D, F) and (C, B, A, F)
6. Give the difference between polynomial and non polynomial time complexity?
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):
 - i) P and NP type problem
 - ii) Matrix multiplication
 - iii) Dynamic programming
 - iv) Greedy methods
