R19

Reg. No:

DESIGN AND ANALYSIS OF ALGORITHMS

Time: 3 hours   Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1 a Differentiate between Bigoh and omega notation with example.   6M

   b Distinguish between Algorithm and Psuedocode.   6M

OR

2 Write the algorithm for Quick Sort. Provide a complete analysis of quick sort for the   12M
   given set of numbers 12, 33, 23,43, 44, 55,64,77 and 76.

UNIT-II

3 What is Minimum cost spanning tree? Explain an algorithm for generating minimum   12M
   cost spanning tree and list some applications of it.

OR

4 Write the algorithm to compute 0/1 Knapsack problem using dynamic programming   12M
   and explain it.

UNIT-III

5 What are the Techniques about Graphs explain it? Describe Bi-connected components.   12M

OR

6 Illustrate Hamiltonian Cycle. Explain Hamiltonian cycles with examples.   12M

UNIT-IV

7 Explain the method of reduction to solve TSP problem using branch and bound?   12M

OR

8 a Explain Multiplying triangular matrices.   6M

   b Describe inverting a lower triangular matrix.   6M

UNIT-V

9 Differentiate between NP- complete and NP-hard problems?   12M

OR

10 a Discuss the general plan for analyzing Time efficiency of recursive algorithm.   6M

    b Explain Reduction Source Problems.   6M

*** END ***