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

Roll No .....

CS-4004 (CBGS)

B.E. IV Semester

Examination, May 2018

Choice Based Grading System (CBGS)

Analysis and Design of Algorithm

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

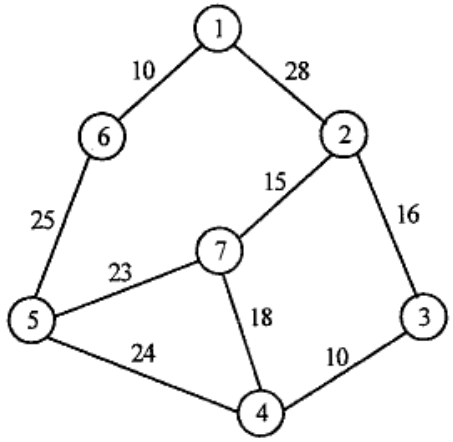
1. a) Explain the various criteria used for analyzing algorithm.
   b) Write the merge sort algorithm and discuss its efficiency. Sort list E, X, A, M, P, L, E in alphabetical order using merge sort.

2. What is knapsack problem in Greedy strategy? Write the running time and recurrence relation of knapsack algorithm?

3. Explain how to implement warshall's algorithm without using extra memory for storing elements of the algorithms intermediate matrices.

4. Apply and Explain the backtracking method to solve the following:
   a) Hamiltonian circuit problem
   b) Subset-sort problem

5. a) Implement an algorithm for Binary search. Discuss in detail about time complexity of Binary search Algorithm.
   b) Apply Prim's algorithm to the following graph. Write their complexity. Find the minimum cost. **rgpvonline.com**



6. a) Discuss in detail NP complete problems with example.
   b) What is Height Balanced Trees? Why to be balanced a height in a Trees?

7. a) Apply the Branch and Bound algorithms to solve the travelling salesman problem. Use suitable graph.
   b) Compare BFS and DFS.

8. Write a short notes (any four):
   a) B Trees
   b) Parallel algorithm
   c) Multistage graphs
   d) Quick sort
   e) Graph coloring

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