

Seat No.	
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T.E. (CSE) (Part - III) (Semester - V) (Revised)

Examination, November - 2017

COMPUTER ALGORITHMS

Sub. Code: 66296

Day and Date : Monday, 20 - 11 - 2017

Total Marks : 100

Time : 10.00 a.m. to 1.00 p.m.

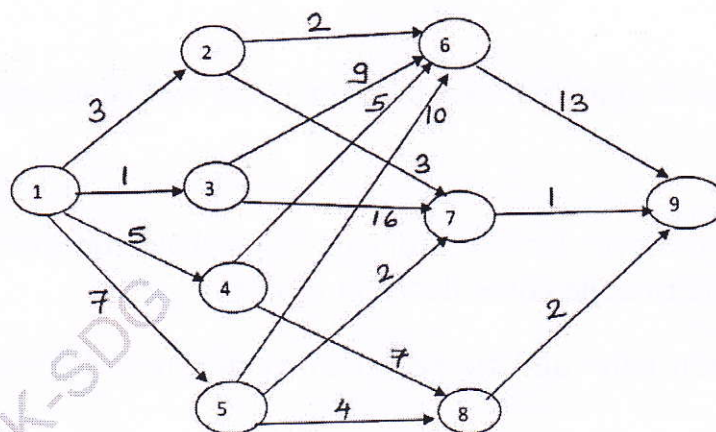
- Instructions :**
- 1) Question No. 4 and 8 are compulsory.
 - 2) Attempt any four questions from remaining questions.
 - 3) Figures to the right indicate full marks.
 - 4) Assume suitable data wherever necessary.

Q1) a) Explain Job sequencing with deadlines. Also calculate the optimal solution for $n=5$ jobs, where profits $(p_1, p_2, p_3, p_4, p_5) = (100, 19, 27, 25, 15)$ and deadlines $(d_1, d_2, d_3, d_4, d_5) = (2, 1, 2, 1, 3)$. [8]

b) Prove that complexity of quick sort in best case is $O(n \log n)$ and that in worst case is $O(n^2)$. [8]

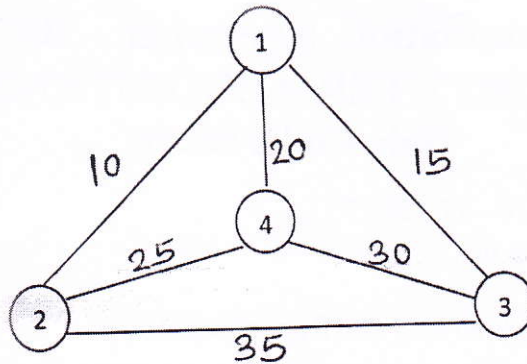
Q2) a) Give solution to Knapsack problem using greedy solution. [8]

b) Find the minimum cost path from s to t in the multistage graph given below using forward approach. [8]



P.T.O.

- Q3) a) Solve the instance of Travelling sales person problem to find tour of minimum cost. [8]



- b) What is an Algorithm? What are the characteristics of the algorithm? [8]

- Q4) Write short note on (Solve any three) [18]

- Difference between Priori and Posteriori analysis.
- Randomized algorithms
- Knapsack 0/1
- Greedy Method

- Q5) a) Explain breadth first search and depth first search with suitable example. [8]

- b) Explain solution to knapsack problem using back-tracking. [8]

- Q6) a) What is node cover decision problem? Show that clique decision problem is reducible to node cover decision problem. [8]

- b) Explain non deterministic satisfiability and non deterministic clique problem. [8]

- Q7) a)** What is deterministic list ranking problem in PRAM? Explain with example. [8]
- b)** Explain prefix sum computation with the help of Mesh and Hypercube. [8]

Q8) Write short note on:

[18]

- a) Hamiltonian Cycle
- b) Articulation Point
- c) Butterfly network.

