SF - 230

Total No. of Pages :3

Seat No.	

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.

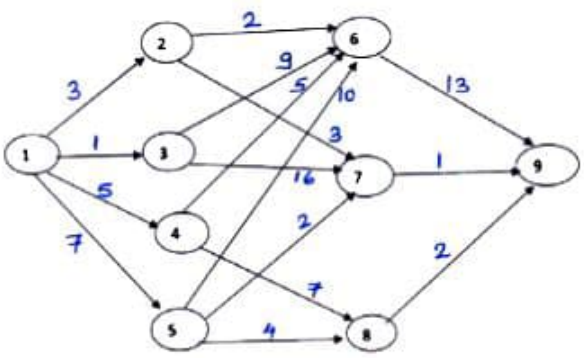
Instructions :
1) **Question No. 4 and 8 are compulsory.**
2) **Attempt any four questions from remaining questions.**
3) **Figures to the right indicate full marks.**
4) **Assume suitable data wherever necessary.**

Q1) a) Explain Job sequencing with deadlines. Also calculate the optimal solution for n=5 jobs, where profits (p1,p2,p3,p4,p5) = (100, 19, 27, 25,15) and deadlines (d1,d2,d3,d4,d5)=(2,1,2,1,3). **[8]**

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

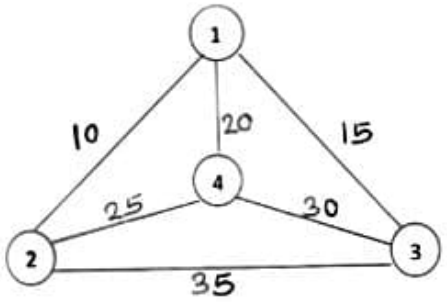
Q2) a) Give solution to Knapsack problem using greedy solution. **[8]**

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]**

a) Difference between Priori and Posteriori analysis.

b) Randomized algorithms

c) Knapsack 0/1

d) 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.