



Time Duration: 03Hrs

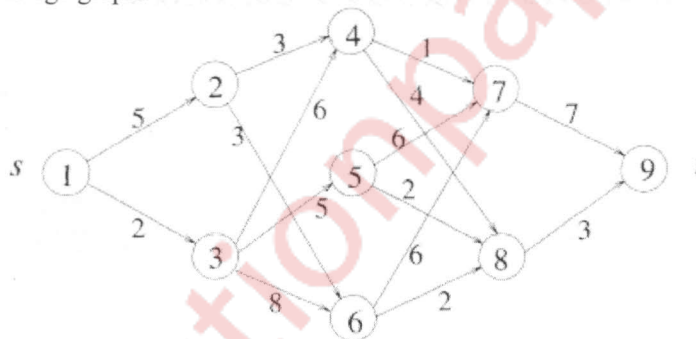
Marks: 80

Note: Question 1 is compulsory.

Attempt any three out of remaining five questions.

Make suitable assumptions whenever necessary.

- Q.1 [a] Explain the Strassen's matrix multiplication concept with an example. [10]  
Derive its time complexity.
- [b] Apply the quick sort algorithm to sort the list. E,X,A,M,P,L,E in alphabetical order. Analyze the best case, worst case and average case complexities of quick sort. [10]
- Q.2 [a] Solve following problem of sum of subset and draw portion of state space tree. [10]  
 $w = (5, 7, 10, 12, 15, 18, 20)$  and  $m = 35$ .  
Find all possible subsets of  $w$  that sum to  $m$ .
- [b] What is single source shortest path algorithm. Write an algorithm to find single source shortest path using greedy methods [10]
- Q.3 [a] Prove that vertex cover problem is NP complete. [10]  
[b] Explain various string matching algorithms. [10]
- Q.4 [a] Find the minimum cost path from  $s$  to  $t$  in the following figure using multistage graph. [10]



- [b] Describe the Travelling sales person problem and discuss how to solve it using dynamic programming with example. [10]
- Q.5 [a] What is longest common subsequence problem? Find the LCS for the following problem. [10]  
[b] Write a short note on 8 queen problem, Write an algorithm for the same. [10]
- Q.6 Write a short note on (Any two) [10]  
1. Branch and Bound Strategy. [10]  
2. Algorithms to find minimum spanning tree. [10]  
3. Recurrences.

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**Subject: Correction in QP CODE: 55800**

From: University of Mumbai <support@muapps.in> on Tue, 27 Nov 2018 15:29:39

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University of Mumbai

Correction in 1T00724 - S.E.(COMPUTER)(Sem IV) (Choice Based) / 40502 - ANALYSIS OF ALGORITHM **QP CODE: 55800**

Q 5 a. Whats is longest common sub sequence problem ?Find the LCS for the following problem.

s1=abcdaf

s2=acbcf.

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