School of Computing Science and Engineering

B.Tech CSE
ETE - Jun 2023

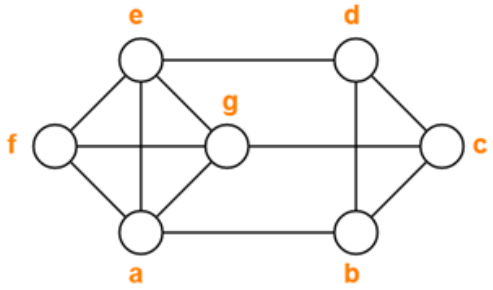
Time : 3 Hours **Marks : 100**

Sem IV - E2UC403B / BTCS2402
Analysis and Design of Algorithms
Your answer should be specific to the question asked
Draw neat labeled diagrams wherever necessary

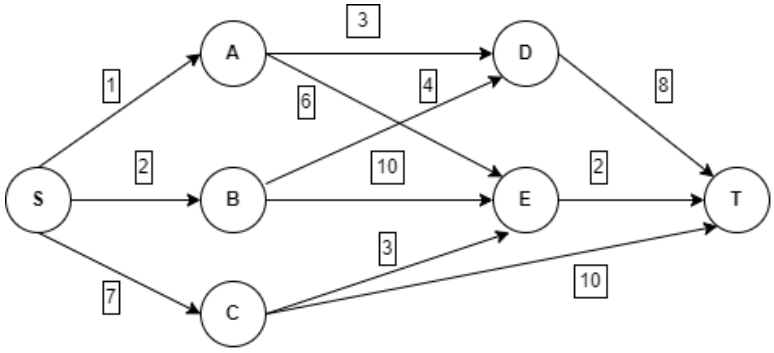
1.	Compare between greedy and dynamic programming approach.	K2 CO2	(5)
2.	How binomial heap is differnt from fibonacci heap?	K1 CO1	(5)
3.	Analyse time and space complexity of an algorithm with an example.	K3 CO2	(5)
4)	Analyse the String Matching using Rabin-Karp algorithm and also analyze its complexity.	K4 CO5	(10)

OR

	Given a set of positive integers, and a value sum, analyse and solve the sum of the subset of a given set is equal to the given sum. Take Input: set[]={2, 3, 5, 6, 8, 10}, sum= 10.	K4 CO5	(10)
5.	Expain the concept of chromatic number of the following graph-	K2 CO2	(10)



6.	Analyse the behavior of Quick Sort when the input is already reverse sorted and all the elements have equal values.	K4 CO2	(10)
7.	Recall the concept of Dynamic Programming (DP) Algorithmic Paradigm? List a few problems which can be solved using the same.	K1 CO1	(10)
8.	Solve the Travelling Salesman problem using branch and bound algorithms	K3 CO4	(15)
9.	Solve using Multistage graph by using dynamic programming approach.	K3 CO4	(15)



10)	Consider Knapsack capacity W=9, w = (3,4,5,7) and v=(12,40,25,42) Examine the maximum profit using dynamic method.	K4 CO3	(15)

OR

	Analyse, Wether the Hamiltonian problem is an NP-Complete or not?.Justify your answer with comments.	K4 CO4	(15)