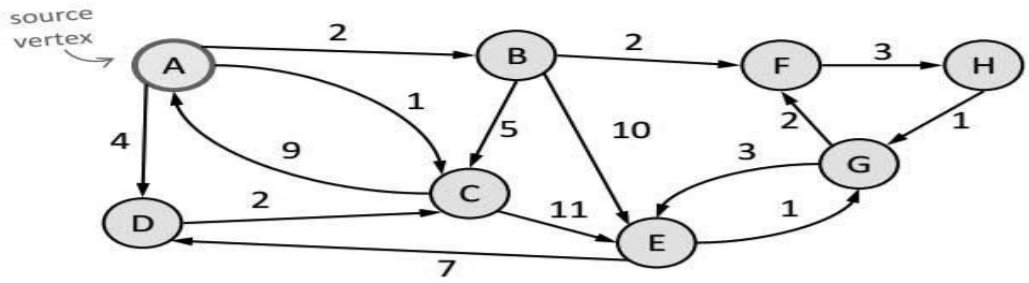
Department of Computer Science and Information Technology

Assignment-5

Design and Analysis of Algorithm

Q. No.	Questions	CO	Bloom's level
1.	Write Rabin Karp string matching algorithm. Working modulo q=11, how many spurious hits does the Rabin karp matcher in the text T= 3141592653589793, when looking for the pattern P=26.	CO5	L3
2.	Discuss the advantages of using B-Tree. Insert the following Information 86, 23, 91, 4, 67, 18, 32, 54, 46, 96, 45 into an empty B-Tree with degree t = 2 and delete 18, 23 from it.	CO2	L4
3.	Describe in detail Knuth-Morris-Pratt string matching algorithm. Compute the prefix function π for the pattern ababbabbabbababbabb when the alphabet is Σ = {a,b}.	CO5	L4
4.	Write and explain the algorithm to solve vertex cover problem using approximation algorithm.	CO5	L4
5.	Explain Randomized algorithm in brief.	CO5	L4
6.	Find an optimal parenthesization of a matrix chain product whose sequence of dimensions is {10, 5, 3, 12, 6}.	CO4	L4
7.	Solve the Subset sum problem using Backtracking, where n=4, m=18, w[4] = {5, 10, 8, 13}	CO4	L4
8.	Define NP-Hard and NP- complete problems. What are the steps involved in proving a problem NP-complete? Specify the problems already proved to be NP-complete.	CO5	L3
9.	Apply the greedy single source shortest path algorithm on the following graph:	CO3	L4

			
10	What is an approximation algorithm? What is meant by P(n) approximation algorithms? Discuss approximation algorithm for Travelling Salesman Problem.	CO5	L4