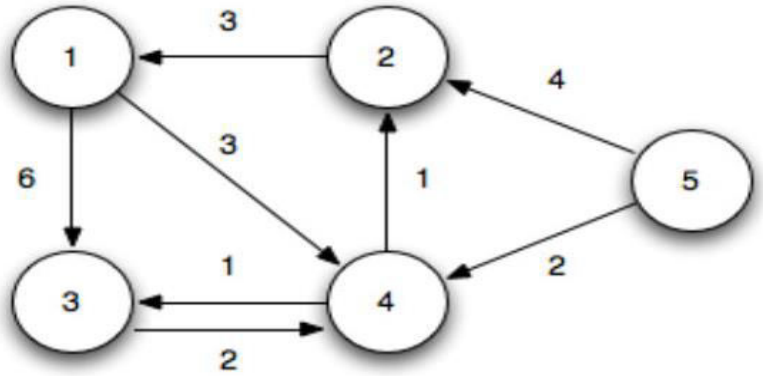
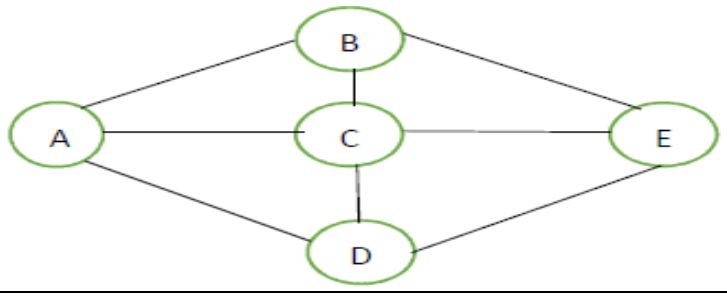
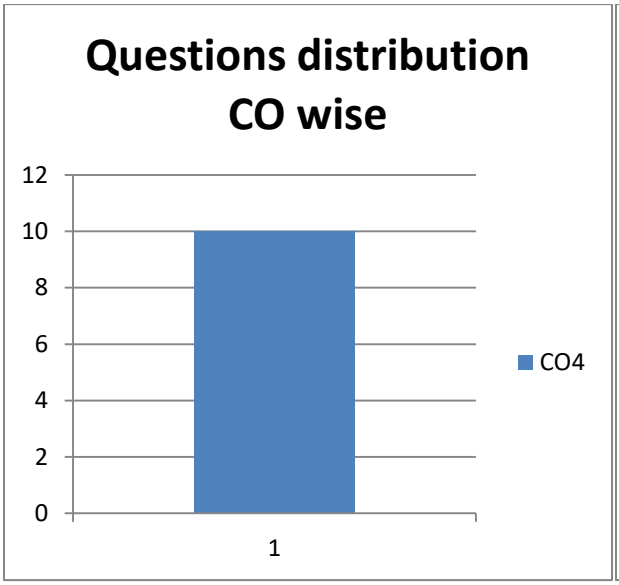
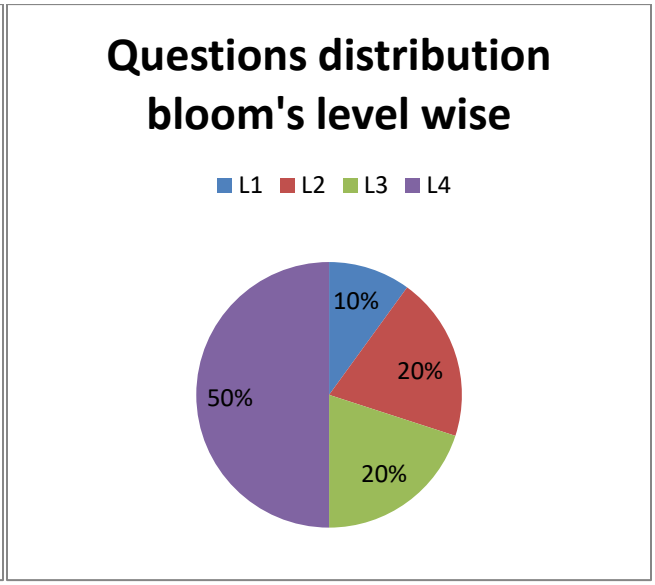
Department of Computer Science and Information Technology

Assignment-4

Design and Analysis of Algorithm

Q. No.	Questions	CO	Bloom's level
1.	Define principal of optimality. When and how dynamic programming is applicable.	CO4	L2
2.	Difference between Greedy Technique and Dynamic programming.	CO4	L2
3.	Write down an algorithm to compute Longest Common Subsequence (LCS) of two given strings and analyze its time complexity.	CO4	L3
4.	Solve the following 0/1 knapsack problem using dynamic programming. P=[11,21,31,33] w=[2,11,22,15] c=40, n=4.	CO4	L4
5.	Define Floyd Warshall Algorithm for all pair shortest path and apply the same on following graph: 	CO4	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.	What is the difference between Backtracking and Branch & Bound? Write Pseudo code for Subset Sum Problem using Backtracking. Give example for the same.	CO4	L4
9.	Consider a graph G=(V,E). Find a Hamiltonian cycle using backtracking method. 	CO4	L3
10	Explain Implicit and Explicit constraints of N-queen Problem.	CO4	L1


Questions distribution CO wise
12
10
8
6
4
2
0
1
CO4


Questions distribution bloom's level wise
L1
L2
L3
L4
10%
20%
20%
50%