

B. P. PODDAR INSTITUTE OF MANAGEMENT & TECHNOLOGY DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING LABORATORY NAME: DONALD K KNUTH LAB(C101) ACADEMIC YEAR: 2018-2019 ODD SEMESTER

DESIGN ANALYSIS OF ALGORITHMS LAB (CS 591)

ТОРІС	LIST OF EXPERIMENTS	CO	PO/ PSO
 Lab 1: Divide and Conquer Implement Binary Search using Divide and Conquer approach Implement Merge Sort using Divide and Conquer approach 	 I. Write a C program to implement Binary Search using Recursive and Non-Recursive approach for the following set of inputs. 23 44 32 11 9 6 67 12 Search Element: 44 II.(a) Write a C program to implement Merge Sort to sort the following n elements. 458 235 158 789 245 069 589 354 II.(b) Calculate the time to sort 1000 numbers using Merge Sort. 	CO1	PO1, PO2, PO3, PO4, PO8, PO9, PO10, PO12, PSO1 PSO2
 Lab 2: Divide and Conquer Implement Quick Sort using Divide and Conquer approach Find Maximum and Minimum element from a array of integer using Divide and Conquer 	 III.(a) Write a C program to implement Quick Sort to sort the following n elements. 458 235 158 789 245 069 589 354 III.(b) Calculate the time to sort 1000 numbers using Merge Sort. 	CO1	PO1, PO2, PO3, PO4, PO8, PO9, PO10, PO12, PSO1 PSO2
 Lab 3: Dynamic Programming Find the minimum number of scalar multiplication needed for chain of matrix 	IV. Write a C program to calculate the minimum number of scalar multiplication needed for matrix chain multiplication for the following order of 4 matrices. A(50,20) x B(20,1) x C(1,10) x D(10,100)	CO2	PO1, PO2, PO3, PO4, PO8, PO9, PO10, PO10, PO12, PSO1 PSO2
 Lab 4: Dynamic Programming Implement all pair of Shortest path for a graph (Floyed- Warshall Algorithm) Implement 		CO3	PO1, PO2, PO3, PO4, PO8, PO9, PO10,

Traveling Salesman Problem			PO12, PSO1 PSO2
Lab 5: Dynamic Programming • Implement Single Source shortest Path for a graph (Dijkstra, Bellman Ford Algorithm)		CO3	PO1, PO2, PO3, PO4, PO8, PO9, PO10, PO10, PSO1 PSO2
Lab 6: Backtracking (implement any one of the following problem) • Implement 8 Queen problem	V. Write a C Program to implement 8 Queens problem using Backtracking	CO4,	PO1, PO2, PO3, PO4, PO8, PO9, PO10, PO12, PSO1 PSO2
 Lab7: Backtracking (implement any one of the following problem) Graph Coloring Problem Hamiltonian Problem 	VI. Write a C program to implement Graph Coloring Problem for the following Graph using Backtracking.	CO4 CO5	PO1, PO2, PO3, PO4, PO8, PO9, PO10, PO12, PSO1 PSO2
 Lab 8: Greedy method(implement any one of the following problem) Knapsack Problem Job sequencing with deadlines 	VII. Write a C program to implement Knapsack problem for the following instance.Number of objects:- 7 Capacity of knapsack:- 15 weights and profits of each object:- 2210355157716	CO2	PO1, PO2, PO3, PO4, PO8, PO9, PO10, PO12, PSO1 PSO2

	4 18 1 3 Find the Result Vector and Maximum profit		
 Lab 9: Greedy method(implement any one of the following problem) Minimum Cost Spanning Tree by Prim's Algorithm Minimum Cost Spanning Tree by Kruskal's Algorithm 	VIII. Write a C program to find Minimum Cost Spanning Tree using Prim's Algorithm and Krushkal's Algorithm for the following Graph.	CO2 CO5	PO1, PO2, PO3, PO4, PO8, PO9, PO10, PO12, PSO1 PSO2
Lab 10: Graph Traversal Algorithm Implement Breadth First Search (BFS) Implement Depth First Search (DFS)	IX. Write a C program to implement BFS and DFS algorithm for the following Graph.	,CO5	PO1, PO2, PO3, PO4, PO9, PO10, PO12, PSO1 PSO2