**VASAVI COLLEGE OF ENGINEERING (Autonomous)**

**IBRAHIMBAGH, HYDERABAD-500031**

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**DAA Lab External**

Class: B.E 2/4 CSE-AIML

Semester: IV

Academic Year: 2022-23

1. a. Write a C program to implement Depth First Search (DFS) traversal.

b. Write a C program to implement Heap sort alogorithm.

1. a. Write a C program to implement Breadth First Search (BFS) traversal.

b. Implement fractional Knapsack algorithm.

1. a. Implement Merge sort algorithm.

b. Implement Program to display the topological sorting of a given Directed Acyclic Graph (DAG)

1. a. Implement Quick sort using divide and conquer

b. Given a message of M distinct characters of total length N. the frequency of   
these characters is f1, f2, f3 ….. fm. For secure transmission over internet   
the message was Encoded with Huffman encoding technique. Write a C   
program to print the Huffman codes for each character

1. a. Write a C program to implement a Hash table with Linear probing

b. Implement Optimal storage on tapes.

1. a. Implement maximum and minimum finding algorithm using divide and conquer.

b. Write a C program to schedule the given jobs within deadlines in an optimal   
way (maximize profit) applying greedy method.

1. a. Implement Kruskal’s minimum cost spanning tree algorithm.

b. Program to implement iterative Inorder traversal for a binary tree.

1. a. Implement Prim’s minimum cost spanning tree algorithm.

b. Implement Binary Search using divide and conquer algorithm.

1. a. Implement Dijkstra’s single source shortest paths algorithm.

b. Implement hashing using double hashing.

1. a. Implement Multistate graph with dynamic programming design strategy.

b. Implement Quick sort using divide and conquer.

1. a. Implement All-pairs shortest paths with dynamic programming design strategy.

b. Implement randomized quick sort algorithm.

1. a. Implement 0/1 knapsack with dynamic programming design strategy.

b. Indian currency has the following ten denominations  
{1,2,5,10,20,50,100,200,500,2000}. An account holder of a bank wants to withdraw an amount from his savings account. Write a C program using greedy method to get minimum number of coins/notes for his amount.  
➔How many coins/notes?  
➔ What is the denomination?

1. a. Implement TSP with dynamic programming design strategy.

b. Write a program to check whether the given graph is DAG or not.

1. a. Implement OBST with algorithm with dynamic programming design strategy.

b. Implement Iterative Inorder Traversal.

1. a. Implement matrix chain multiplication algorithm with dynamic programming design strategy.

b. Implement Iterative preorder Traversal.

1. a. Implement LCS algorithm with dynamic programming design strategy.

b. Implement Iterative postorder Traversal.

1. a. Implement N-Queens algorithm with back tracking.

b. Implement matrix chain multiplication to find minimum number of multiplications required to multiply and also find the order in which multiplication has to be done.

1. a. Implement graph coloring with back tracking.

b. Implement sum-of-subsets using dynamic Programming.

1. a. Implement algorithm for finding Hamiltonian cycle for the appropriate size graph.

b. Implement LIS using dynamic Programming.

1. a. Implement 0/1 knapsack using Branch & Bound.

b. Implement recursive postorder traversal.