**Course: Design and Analysis of algorithm Program: MBA Tech (Computers)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Exp No.** | **Title** | **Date** | **Remarks** |
| 1 | Sort a given set of elements using the quick sort method and determine the time required to sort the elements. Repeat the experiment for different values of n, the number of elements in the 1st to be sorted and plot a graph of the time taken versus n. The elements can be read from a file or can be generated using the random number generator. |  |  |
| 2. | Implement merge sort algorithm to sort a given set of elements and determine the time required to sort the elements. Repeat the experiment for different values of n, the number of elements in the list to be sorted and plot a graph of the time taken versus n. The elements can be read from a file or can be generated using the random number generator. |  |  |
| 3. | Obtain the Topological ordering of vertices in a given digraph. |  |  |
| 4 | Compute the transitive closure of a given directed graph using Warshall's algorithm |  |  |
| 5 | Implement 0/1 Knapsack problem using Dynamic Programming. |  |  |
| 6 | From a given vertex in a weighted connected graph, find shortest paths to other vertices using Dijkstra’s algorithm. |  |  |
| 7 | Find Minimum Cost Spanning Tree of a given undirected graph using Kruskal’s algorithm. |  |  |
| 8 | Perform various tree traversal algorithms for a given tree. |  |  |
| 9 | Find a subset of a given set S = {sl, s2,....., sn} of n positive integers whose sum is equal to a given positive integer d. For example, if S= {1, 2, 5, 6, 8} and d = 9 there are two solutions {1, 2, 6} and {1,8}.A suitable message is to be displayed if the given problem instance doesn't have a solution. |  |  |
| 10 | Implement N Queen's problem using Back Tracking |  |  |

\*Students are required to be ready with prerequisite before attending the lab.