

## KARPAGAM ACADEMY OF HIGHER EDUCATION

Coimbatore-641 021 (For the candidates admitted from 2016 onwards)

## DEPARTMENT OF COMPUTER SCIENCE, CA & IT

## SUBJECT NAME: DESIGN AND ANALYSIS OF ALGORITHMS - PRACTICALSUBJECT CODE: 16CSU411SEMESTER: IVCLASS: II- B. Sc (CS)

## 1. Implement Insertion Sort (The program should report the number of comparisons) ii. Implement Merge Sort(The program should report the number of comparisons)

- 2. Implement Heap Sort (The program should report the number of comparisons)
- 3. Implement Randomized Quick sort (The program should report the number of comparisons)
- 4. Implement Radix Sort
- 5. Create a Red-Black Tree and perform following operations on it: i. Insert a node
- ii. Delete a node
- iii. Search for a number & also report the color of the node containing this number.
- 6. Write a program to determine the LCS of two given sequences
- 7. Implement Breadth-First Search in a graph
- 8. Implement Depth-First Search in a graph
- 9. Write a program to determine the minimum spanning tree of a graph

For the algorithms at S.No 1 to 3 test run the algorithm on 100 different inputs of sizes varying from 30 to 1000. Count the number of comparisons and draw the graph. Compare it with a graph of nlogn.