SE2228 Algorithm Analysis and Design: Assignment-2

(In the questions, use **q**=last two digits of your Id) 21.03.2023

1.Show how the merge sort algorithm works on your name+surname

( Example : John Smith🡪 JohnSmith . Explain the algorithm by drawing merge sort tree using the letters of your name&surname)

2.Express the complexity of Merge Sort as a recurrence equation and solve it.

3. The graph G contains the following vertices and edges with the following weights.

AD 6 AB **q**+2 AC 12 BC 8 DE 3 DC 5 BD 9 CE 4 BE 7

a.Draw this graph and give DFS and BFS listings of the vertices.

b. Run Dijkstra's Algorithm to find the shortest distances in the graph G from a start vertex (Choose the start yourself) to all other vertices.

4. Apply Kruskall algorithm to find a MST of the graph G.

(Show the implementation steps)

5.Apply Prim’s Algorithm to find a MST of the graph G.

(Show the implementation steps )