T-3

1. Explain the two types of rotations (left rotation and right rotation) in Red-Black Trees, with examples of each

2. Define a B-Tree and discuss its key properties. Explain how is it different from a binary search tree.

3. Explain the basic working of Quick Sort and what role does the pivot element play in the algorithm.

4. Draw BST of height 2,3,4 on the set of keys 10,4,5,16,1,17,21

5. Explain partitioning algo in Quick Sort with pseudo-codes.

T-4

1. Explain Strassen’s matrix multiplication algorithm. Compare its time complexity with the standard matrix multiplication method. Also find the multiplication of any two matrix with the help of Strassen’s matrix multiplication algorithm.

Matrix A is and B is

2. Explain the elementary properties of Red-Black tree.

3. Define a spanning tree in a graph. Explain the difference between a minimum spanning tree and a general spanning tree.

4. Create a Red-Black tree on given sequence of keys 10,4,5,16,1,17,21

5. Create a BST on given sequence of keys 10,4,5,16,1,17,21