Assignment List.

1. "To write an efficient program we should know about DS." Explain the above statement.
2. Do the following.
   Convert the following into both postfix and prefix.
   a) (A+B)*(C+D-E)*F
   b) (A+B^D)/(E-F)+G
   c) How do you evaluate a postfix expression? Explain with an example.
3. Explain the concept of Priority Queue in detail.
4. Differentiate between SLL and DLL. Explain the applications of Linked List. Explain the implementation of Queue using SLL.
5. Explain the TOH problem in detail. Also draw the recursion tree for move('A' , 'C' ,'B' , 4)
6. Hand-test Insertion Sort, Bubble Sort, Selection-sort, Quick Sort, Merge Sort, Heap Sort algorithm with the data given below: 56, 23, 14, 20, 65, 7, 8, 14, 15, 25
7. Discuss binary search algorithm? Write a recursive algorithm to implement binary search. What are the benefits of using hashing? How do you choose a hash function?
8. a) Define graph. Discuss Dijkstra's algorithm for finding shortest path in a graph.
   b) Draw AVL tree for the 3, 5, 11, 8, 4, 1, 12, 7, 2, 6, and 10
   c) Construct the BST from the given data.
   Pre-Order: 1,2,4,8,9,10,11,5,3,6,7
   In-Order : 8,4,10,9,11,2,5,1,6,3,7
   Also learn to draw the BST from Pre-Order and Post-Order.