**Assignment-3**

1. Write an algorithm to sort a linked list.
2. Write a program/algorithm to reverse a singly linked list.
3. Write an algorithm to count the number of nodes in a linked list.
4. Write a pseudo code to delete a particular value from linked list.
5. Write an algorithm that removes first element of a list add it to the end of linked list without changing the information part.
6. Explain PUSH() and POP() operations used in stack with example.
7. Translate the following infix expression into its equivalent postfix expression using stack:

A \* (B + D) / E – F \* (G + H / K)

1. Consider the following arithmetic expression P, written in postfix notation and evaluate the infix expression.

12, 7, 3, -, /, 2, 1, 5, +, \*, +

1. Write an algorithm to delete the nth element from front of circular queue.
2. Circular Queue is to be implemented using a array of 10 elements .Write the pseudo code for implementation of inserting an element in queue and checking whether queue is empty or not.
3. Consider the following queue of characters, where QUEUE is a circular array. (‘\_’ is used to denote an empty memory cell).

QUEUE: \_ A C D \_ \_

FRONT = 2, REAR = 4

Describe the queue as the following operations take place

1. F is added to the queue.
2. Two letters are deleted.
3. K, L and M are added to the queue.
4. Two letters are deleted.
5. R is added to the queue
6. Two letters are deleted.
7. S is added to the queue.
8. Two letters are deleted.
9. One letter is deleted
10. One letter is deleted