CTA-ASSIGNMENT

Course Code: 22UCSC300 Course Title: Data Structures and Applications

Max Marks: 5 Sem:3 A

1.	Write a C program to convert a valid parenthesized infix expression to prefix expression. (Expression includes operators +, -, * and /)
2.	Write a C program to evaluate a given valid prefix expression. (Expression includes operators +, -, * and /)
3.	Write a C program to convert a given postfix expression to infix expression. (Expression includes operators +, -, * and /)
4.	Define an input restricted deque as a Deque[A deque is an ordered set of items from which items may be deleted at either end, (remvleft,remvright) and into which items may be inserted at either end(insertleft,insertright)] for which only the operations remvleft,remright and insertleft are valid. Show how each of this can be used to represent both stack and queues respectively.
5.	Write a C program to implement descending priority queue. **Note:** An descending priority queue is a collection of elements where an element is inserted such that the largest value element is always at the front of the queue.
6.	Write a C program to implement an ascending priority queue. **Note:** An ascending priority queue is a collection of elements where an element is inserted such that the smallest element is always at the front of the queue.
7.	Let A and B are two lists representing the two polynomials with single variable. Write a C program to implement the following operation. C=A+B; where Cis also a list representing a polynomial and is obtained by adding A and B.
8.	Let A and B are two lists representing the two polynomials with single variable. Write a C program to implement the following operation. C=A*B; where C is also a list representing a polynomial and is obtained by adding A and B.

9.	Write a C program to store a given sparse matrix using linked lists and search for a given element in the matrix. If it is present display row and column index of the element otherwise print appropriate error message..