Indian Institute of Information Technology Sri City, Chittoor
(An Institute of National Importance under An Act of Parliament)

Name: DSA Lab

Duration: 3Hrs

Lab Assignment: 04

Total Marks: 20

INSTRUCTIONS:

1. Please carefully read all questions and there is no choice.
2. Submit single .c file for the all the assignment problems. ***Remove the comments from the code before submitting the file.***
a. Name the file as follows: **S2020xxxxxA4.c** (YourRollNoA4.c) for the solution for problems.
3. Do NOT zip. Just attach the .c files directly to your submission in common Google classroom. Not following instructions leads to heavy penalty.

Q1 Write a function to Concatenate two given single linked list into one big list.

    struct node *concatenate (node *head1, node *head2);

Q2. Write a function Insert an element in a linked list in sorted order. The function will be called for every element to be inserted.

    struct node insert_sorted (node *head, node *element);

Q3. Write a C program to merge two circular linked list and the merged list should contain one header node instead of two header nodes

Q4. Write a C program to reverse a given doubly linked list. What will be the time complexity of the program (\\ time complexity in comments)

Q5. Write a C program to

a. Store two polynomials using linked list.
b. Perform addition, subtraction and multiplication on the two polynomials and store the result as new linked list.