**Data Structure**

**Term Work**

**B.Tech (CSE/CE/CST ) III Semester**

**Date of submission :08/12/2021**

**INSTRUCTIONS:**

**1.The programs should have source code and its output separately.**

**2. Programs in the file should be numbered as given in the term work.**

**3. All programs should be menu driven**

**4. Thick chart paper (green for UG courses / Light Pink For PG courses)**

**binding for the file is required.**

**5. The file should have 4 pages initially in black and white in the given order**

**a. front page-In Submitted To ..**

**b. certificate**

**c. Acknowledgement**

**d. Index**

**6. Use A4 size bond paper for algorithm.**

**7. Do not use global pointers/variables.**

1.Write a menu driven program in C to implement stack using single pointer.

2.Write a menu driven program in C to implement stack using double pointer.

3.Write a menu driven program in C to implement queue using single pointer.

4.Write a menu driven program in C to implement queue using double pointer.

5. Using circular Queue allocate time slots of 10ms for given processes in time sharing environment

and then print which process will be completed in how much time.

6. Write a menu driven program to arrange nodes(info) in ascending order using doubly linked list.

7. Write a menu driven program to Implement following operation in Binary search tree:-

a. Insert() {To Insert nodes in BST}

b. Display() {To display BST in inoredr}

c. Total\_Node(){For calculating total number of nodes in BST}

d. Total\_Leaf(){For calculating total number of leaf nodes in BST}

e. Left\_Child(){For calculating total number of nodes having only left child }

f. Both\_Child(){For calculating total number of nodes having both children}

g. Delete\_Node(){Search a key and then update BST by deleting the node }

h.Search\_Node(){Search a node if fond return its parent node}

8.Write a C program to store the details of a weighted graph (Use array of pointers concept).

9. Write a C program to implement the Kruskal’s algorithm to find minimum spanning tree.

Q10.Write a C program to find the addition of two polynomial of degree N.

i.e P1=AnXn  + An-1Xn-1 + An-2Xn-2 + An-3Xn-3 + ……………. A0X0

P2 =BnXn  + Bn-1Xn-1 + Bn-2Xn-2 + Bn-3Xn-3 + ……………. B0X0

Find P3=P1+P2