B.Tech CSE III Sem
Term Work - Data structure
using 'c' –language

Date of Submission: 20-12-2022

NOTES: 1. Term Work should contain front Page containing GEHU logo.
2. There should be Top, Left, Right and Bottom Margins.
3. Index page/s should be properly filled.
4. Write algorithm for each problem on A4 size bond paper
4. Output of each program should be on separate page.
5. All page must contain page number.

Note: 1. Use function for all problems.
2. Do not use global variables/pointers.

Q1.Write a C Program to store N elements to an array and then send all positive elements of the array to the end without altering the original sequence.

Q2.Write a C program to create two linked lists positive and negative from a Original linked list, so that positive linked list contains all positive elements and negative linked list contains negative elements. Positive and negative linked lists should use the node of existing original linked list.

Q3.Write a C program to create a linked list P, then write a 'C' function named **split** to create two linked lists Q & R from P So that Q contains all elements in odd positions of P and R contains the remaining elements. Finally print both linked lists i.e. Q and R.

Q4.Write a program to add of two polynomials of degree n, using linked list

For example $p1=a_nx^n+a_{n-1}x^{n-1} + a_{n-2}x^{n-2} + \ldots\ldots\ldots a^0x^0$

$P2=b_nx^n+b_{n-1}x^{n-1} + b_{n-2}x^{n-2} + \ldots\ldots\ldots b^0x^0$

p1 = first polynomial

p2 = second polynomial

Find out p3= p1+p2

Q5.Wriet a C program to implement time sharing environment (using circular linked list) for N processes, where CPU allocates time slots of 10ns for given N processes, then print which process will be completed in how much time.

Q6.Write a C program to create a double linked list by inserting nodes in such a way that the resultant linked list remains in ascending order.(do not use any sorting technique).

Q7. Write a C program to create a binary search tree and perform following operations:

1) Search a particular key.
2) Delete a node from the tree.
3) Find total number of leaf nodes
4) Find height of a binary search tree
5) Count total numbers of nodes from right hand side of root node

Q8. Write a C program to sort an unsorted sequence of strings given by user in an array, using Merge sort technique.

Q9. Write a C program to implement linked representation of a graph in memory using array of pointers.

Q10. Write a C program to implement DFS.

Q11.Write a C program to implement Kurskal's algorithm.