2023

COMPUTER SCIENCE — HONOURS — PRACTICAL

Paper : CC-3P

(Data Structure using C)

Full Marks : 30

Set - 1

Marks Distribution

Algorithm :	5
Source Code :	10
Output :	5
Laboratory Notebook :	4
Viva voce :	6

Answer *any one* question.

1. Write a program in C to perform merging of two one-dimensional arrays, after taking all the necessary inputs from the user.

2. Write a program in C to create a singly linked list, and perform the following operation, using a menu :
   (a) Delete an element from a specified location.
   (b) Count the number of nodes.
   (c) Display the list.

3. Write a program in C to perform addition of two polynomials (of a single variable) using singly linked lists.

4. Write a program in C to implement stack operations using array and perform Insertion and Deletion operations. Show all possible exception / error cases.

5. Write a program in C to take a string of brackets (all 3 types) as input, and check whether it is balanced or not. Show proper error messages.

6. Write a program in C to input a list of integers and sort the list using bubble sort.

7. Write a program in C to create a Binary Search Tree (BST) and incorporate the following operations :

   (a) Count the number of leaf and non-leaf nodes.

   (b) Perform in-order traversal.

8. Write a program in C to create a singly linked list with even number of elements. Then swap the odd and even positioned elements to create a new list. Display both the original and changed list.

9. Write a program in C to convert an infix expression to its equivalent postfix form.

10. Write a C program to perform Binary Search on a list of integers. The input may not be in sorted order, and hence needs pre-processing.

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