

**2024**

**COMPUTER SCIENCE — HONOURS — PRACTICAL**

**Paper : CC-3P**

**(Data Structure)**

**Full Marks : 30**

**SET - 2**

**Marks Distribution :**

Algorithm	:	05
Source Code	:	10
Output	:	05
Laboratory Notebook	:	04
Viva voce	:	06

Answer *any one* question.

1. Write a program in C to reverse an array, without using a second array, and then print all the even positioned elements.
2. Write a program in C to create a singly-linked list, after taking the number of elements as an input from the user. Then perform the following operations using a menu —
  - (a) Count the number of nodes having positive data
  - (b) Display the list.
3. Write a program in C to perform addition of two polynomials (using singly-linked list) of a single variable.

( 2 )

**B(2nd Sm.)-Computer Sc.-HI/Pr./CC-3P/CBCS/Set-2**

4. Write a program in C to implement stack operations using linked list, and handle all possible 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, while handling error cases.
  
  6. Write a program in C to input a list of integers and sort the list using Selection Sort.
  
  7. Write a program in C to create a Binary Search Tree (BST) and perform post order traversal in non-recursive manner.
  
  8. Write a program in C to create a singly-linked list in which elements are entered (and subsequently maintained) in sorted order. Now perform the following operations :
    - (a) Insert a new item in its proper position
    - (b) Print the full list.
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