SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
B.Sc.(Computer Science) END SEMESTER EXAMINATIONS NOVEMBER -2023
SEMESTER - I
**21UCSCT1001 - Problem Solving through Programming in C**

Total Duration : 2 Hrs 30 Mins. Total Marks : 60

## Section B

### Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. Illustrate the distinctions between top-down and bottom-up design approaches and when should you opt for one over the other in the software design process.

2. Interpret the steps involved in transforming the visual representation of a flowchart into a functional code or pseudocode that can be used in programming.

3. Compute a C program to reverse a given number using while loop.

4. Apply the recursive function to count the number of digits in a given list of numbers using C.

5. Summarize i) Variables    ii) Constants    iii) Data Types with examples.

6. Explain various String Library Functions.

7. Create a structure named complex to model a complex number and also write a program to add two complex numbers using this structure.

8. Examine about structure initialization, copying and comparing structure variable.

## Section C

### Answer any **THREE** questions $(3 \times 10 = 30$ Marks)

9. Describe a 'C' program to find the factorial of a given number without using recursion.

10. Compute a program to perform matrix addition using multidimensional array.

11. Examine the two-way selection in C language with example:
    i) if      ii) if- else      iii) nested-if

12. Explain about storage classes with example.

13. Implement the concept of passing arrays to functions in a C program to generate student mark sheet.

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