REG.NO.: 24BHT0014

VIT
Vellore Institute of Technology

SCHOOL OF ELECTRONICS ENGINEERING (SENSE)
CONTINUOUS ASSESSMENT TEST - I
WINTER SEMESTER 2024-2025

SLOT: E1

Programme Name & Branch	: BTECH - Health Sciences and Technology
Course Code and Course Name	: BCSE102 & Structured and Object-Oriented Programming
Faculty Name(s)	: BHARATH BABU S
Class Number(s)	: VL2024250501467
Date of Examination	: 31-01-2025
Exam Duration	: 90 minutes **Maximum Marks: 50**

General instruction(s):

- Answer All Questions
- M - Max mark; CO – Course Outcome; BL – Blooms Taxonomy Level (1 – Remember, 2 – Understand, 3 – Apply, 4 – Analyse, 5 – Evaluate, 6 – Create)
- Course Outcomes:

CO1. Understand Different programming language constructs and decision-making statements; manipulate data as a group.

CO2. Recognize the application of modular programming approach; create user-defined data types and idealize the role of pointers.

Q. No	Question	M	CO	BL
1.	a) Write a program to read the age of 10 persons and count the number of persons in the age group 50 to 60 and 30 to 40. Using For loop and if – else statements.	5	CO1	BL2
	b) Write a C Program to print an Inverted half-pyramid pattern to get the following output. 1 12 123 1234 12345	5	CO1	BL2
2.	You own a video game arcade. Your arcade charges are based on the amount of time a player spends playing. Write a program to calculate the bill for playing games in your arcade. The conditions are as follows: (a) 1 Hour costs Rs. 100 (b) 1-minute costs Rs. 2 (c) Rs. 450 for five hours **Boundary condition:** A user can play for a maximum of 8 hours. Check boundary conditions.	10	CO1	BL2
3	a) Write a program in C to read a number from a user and then find the factorial of that number using a user-defined function.	5	CO2	BL2
	b) Distinguish with an example call by value and call by reference.	5	CO2	BL2
4.	Write a C program that finds the top three highest marks in a class. The user should enter the number of students and their respective marks. Use an array to store the marks and determine the three highest marks among the students.	10	CO2	BL3

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5.	Write a C program demonstrating the use of auto, register, static, and extern storage classes to optimize efficiency and memory management with examples.	10	CO2	BL3

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