

SCHOOL OF COMPUTER SCIENCE ENGINEERING AND INFORMATION SYSTEMS
CONTINUOUS ASSESSMENT TEST - I
WINTER SEMESTER 2024-2025

SLOT: F2

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Programme Name & Branch	: M.Tech (SE)
Course Code and Course Name	: ICSE102L & Structured and Object Oriented Programming
Faculty Name(s)	: Dr. Jothish Kumar M, Dr. P. Shunmuga Perumal Dr. Malathy E, Dr. Nancy Victor
Class Number(s)	: VL2024250504147, VL2024250504161, VL2024250504157, VL2024250504152
Date of Examination	: 01-Feb-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
 1. Understand different programming language constructs and decision-making statements; manipulate data as group.
 2. 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.	Write a C program using a switch-case statement to calculate the area of different shapes based on user input. The program should allow the user to choose one of the following options: - Circle (Given the radius, area = $\pi * r^2$) - Rectangle (Given length and breadth, area = length * breadth) - Triangle (Given base and height, area = $0.5 * \text{base} * \text{height}$) - Square (Given side length, area = side * side) - If the user enters an invalid option, print "Invalid option".	10	1	1
2.	In C programming, both for loops and while loops are used for repetitive execution of code. Analyse the difference between a for loop and a while loop. Discuss their syntax, characteristics, and suitable use cases with examples. Also, explain how to handle the loop termination.	10	1	4
3.	Write a C program to read a series of floating-point numbers from the user, store them in a 1-dimensional array. Compute the sum of all entered numbers and display the same.	10	1	1
4.	a) What are the fundamental differences between call by value and call by reference in function arguments? Explain it with suitable examples.	5	2	2
	b) Write a C program to calculate the factorial of a given number using a user-defined function with argument and return value.	5		
5.	Write a C program to perform the addition of two matrices with following requirements: - Ask the user to input the order for both matrices. - If the number of rows and columns of the two matrices are not equal, print an error message indicating that matrix addition is not possible. - If the matrices have the same order, ask the user to input the elements of both matrices. - Perform the addition of the two matrices and store the result in a third matrix. - Display the two input matrices and the resulting matrix after addition.	10	2	2
