



VIT

Vellore Institute of Technology

REG.NO.:

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

SLOT: G1

Programme Name & Branch	: B.Tech & CSE
Course Code and Course Name	: BCSE102L - Structured and Object-Oriented Programming
Faculty Name(s)	: SENTHIL KUMAR K, JAYASHREE J, KEERTHIKA P, JAYA SUBALAKSHMI R, SARITHA MURALI, KALAIVANI K, PRIYADHARSINI M, SRI PREETHAA K R, KARTHIK K, DHIVYAA C R, GLADYS GNANA KIRUBA B, JAGALINGAM P, SURESH P
Class Number(s)	: VL2024250501453, 1465, 1477, 1495, 1516, 1552, 1560, 1572, 1585, 1592, 1661, 1663, 6191
Date of Examination	: 02.02.2025
Exam Duration	: 90 minutes
General instruction(s):	Maximum Marks: 50

- Answer All Questions
- M - Max mark; CO - Course Outcome; BL - Blooms Taxonomy Level (1 - Remember, 2 - Understand, 3 - Apply, 4 - Analyze, 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 datatypes and idealize the role of pointers.

Q. No	Question	M	CO	BL
1.	a) A shop offers discounts as follows: <ul style="list-style-type: none"> • If the purchase amount is above ₹5000, apply a 20% discount. • If it's between ₹2000 and ₹5000, apply a 10% discount. • Otherwise, no discount is applied. Write a C program to calculate and display the final amount after applying the discount.	5		3
	b) Write a C program that accepts a character input ('R', 'Y', 'G') representing the traffic light colours: <ul style="list-style-type: none"> • 'R' for Red: Print "Stop." • 'Y' for Yellow: Print "Get Ready." • 'G' for Green: Print "Go." • Handle invalid inputs with an appropriate message. 	5	1	3
2.	a) Design a simple ATM system that requires the user to enter their PIN to access their account. The program should provide up to three attempts for the user to input the correct PIN. If the user enters the correct PIN within these attempts, display "Access Granted". If the user fails all three attempts, display "Account Locked". Note: The correct PIN is predefined in the program (e.g., 1234).	5	1	3
	b) Write a C program to reverse a given integer. For example, if the input is 12345, the output should be 54321. Use a while loop.	5		3
3.	A movie theatre maintains seating arrangements in a 2D array. Write a C program to:	10	2	3

Maximum Marks: 50
 Understand, 3 - Apply, 4 - Analyse, 5 - Evaluate, 6 - Create
 Course Outcomes (Type the CO statements covered in this question paper. Use the CO number as per the syllabus copy)
 CO2: Recognize the application of modular programming approach; create user defined data types and idealize the role of pointers.
 CO3: Comprehend various elements of object-oriented programming paradigm; propose solutions through inheritance and polymorphism; identify the appropriate data structure for the given problem and devise solution using generic programming techniques.

Create an inventory store. The program should accept the product name (char array) and price (int).
 Write the function following:
 1. Input product details
 2. Display product details
 3. Update the product price
 4. ...

Q. No
 1. Develop a C program to prompt the user to enter the array size (n) and the array elements. If n is ...

Questions



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(Deemed to be University under Section 3 of U.O.A. Act, 1986)

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	<ul style="list-style-type: none"> Input the seating chart (1 for occupied, 0 for vacant). Allow the user to search for a seat by row and column. Display whether the seat is vacant or occupied. Provide an option to display the number of vacant seats in the theatre. 			
4.	Illustrate the difference between non-recursive functions and recursive functions with an example C program to find the factorial of a given number. (Use the function type: with argument and with return type).	10	2	4
5.	Write a program where a function takes the coefficients of a quadratic equation (a, b, and c) as input parameters using call by value. The function should calculate the roots of the equation and displays them within the function itself. Also, define another function that uses call by reference, where it accepts the coefficients (a, b, and c) and the addresses of two variables to store the calculated roots. After the function call, the main program should display the roots.	10	2	3

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