





# VIT

Vellore Institute of Technology  
(Deemed to be University under section 3 of UGC Act, 1956)

REG. NO. :

## SCHOOL OF COMPUTER SCIENCE ENGINEERING AND INFORMATION SYSTEMS (SCORE)

### CONTINUOUS ASSESSMENT TEST - II

SLOT: CZ

WINTER SEMESTER 2024-2025

	<p>Tasks:</p> <ol style="list-style-type: none"> <li>1. Implement a constructor that initializes order details.</li> <li>2. Use the this pointer to return the object for method chaining.</li> <li>3. Implement a method to apply discount: <ul style="list-style-type: none"> <li>o If Amount &gt; 5000, apply 10% discount.</li> <li>o If Amount &gt; 10000, apply 15% discount.</li> </ul> </li> <li>4. Implement a destructor to display a message when an order object is deleted.</li> </ol>			
4.	<p>A company classifies vehicles into Car, Bike, and Truck using multiple inheritance:</p> <ul style="list-style-type: none"> <li>• A base class Vehicle stores model and price.</li> <li>• Class Car has mileage and seating_capacity.</li> <li>• Class Bike has engine_capacity.</li> <li>• Class Truck has load_capacity.</li> </ul> <p>Implement a program to:</p> <ol style="list-style-type: none"> <li>1. Accept and display details of n vehicles.</li> <li>2. Filter and display all vehicles under ₹5,00,000.</li> </ol> <p>Constraints:</p> <ul style="list-style-type: none"> <li>• Implement using multiple inheritance.</li> <li>• Use an efficient search mechanism.</li> </ul>	10	CO3	BL3
5.	<p>The zoo maintains two independent financial systems:</p> <ol style="list-style-type: none"> <li>1. AnimalManagement: Tracks the food expenses for different animals.</li> <li>2. TicketingSystem: Tracks revenue from visitors.</li> </ol> <p>Your task is to model this system using hybrid inheritance without any dependency between them.</p> <ul style="list-style-type: none"> <li>• Implement a base class ZooFinance with a function displayFinanceInfo() that prints a generic finance message.</li> <li>• Implement a derived class AnimalManagement that extends ZooFinance and calculates food expenses for different types of animals.</li> <li>• Implement another derived class TicketingSystem that also extends ZooFinance and calculates revenue based on the number of visitors.</li> <li>• Implement a final derived class FinanceReport that inherits from both AnimalManagement and TicketingSystem, consolidating financial data independently.</li> </ul> <p>Constraints:</p> <ul style="list-style-type: none"> <li>• Food expenses: Carnivores require 5 kg of food per day, and herbivores require 3 kg per day.</li> <li>• Ticket revenue: Each ticket costs \$10, and revenue is calculated as ticketPrice * visitors.</li> </ul> <p>Write a program that allows the user to enter the number of visitors, types of animals, and number of days, then separately calculates total revenue and expenses using hybrid inheritance.</p>	10	CO3	BL2

\*\*\*\*\*