Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

Mid - Term Examinations – October 2025

Date: 08-10-2025 **Time:** 11.45am to 01.15pm

School: SOCSE	**Program:** B.TECH (CSE)	
Course Code : CSE2279	**Course Name:** Object Oriented Analysis & Design	
Semester: V	**Max Marks**: 50	**Weightage**: 25%

CO - Levels	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Marks	**26**	**24**			

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **5Q x 2M=10M**

1	List the 2 characteristics of objects with meaning and example	**2 Marks**	**L1**	**CO1**
2	Define prototyping in object oriented design with example	**2 Marks**	**L1**	**CO1**
3	What is the main purpose of UML?	**2 Marks**	**L1**	**CO1**
4	What is the purpose of a Use Case Diagram?	**2 Marks**	**L1**	**CO2**
5	What is meant by Class, Responsibilities, and Collaborator? Give an example.	**2 Marks**	**L1**	**CO2**

Part B

Answer the Questions. **Total Marks 40M**

6.	**a.**	Illustrate how the three macro processes are applied in object-oriented software development with a diagram.	**10 Marks**	**L2**	**CO1**
		Or			
7.	**a.**	Explain the process and key components of the Unified Approach using the given diagram.	**10 Marks**	**L2**	**CO1**

8.	**a.**	Discuss the key components of Rumbaugh's Object Modeling Technique (OMT), its use in system development, and the benefits of using OMT over other methodologies.	**10 Marks**	**L2**	**CO1**
		Or			
9.	**a.**	Describe how the Jacobson Methodology uses use cases in the software development process and explain their role in identifying system requirements.	**10 Marks**	**L2**	**CO1**

10.	**a.**	Apply the Noun Phrase Approach to the given airline reservation system scenario to identify the relevant classes and objects. Also, outline the steps or guidelines used to extract nouns in this approach. An airline company is building a new reservation system that allows customers to book flights, manage bookings, and receive flight updates. Customers must create an account by providing personal details such as their name, contact information, and payment preferences. Users can search for available flights based on departure and arrival locations, travel dates, and seat preferences (e.g., economy, business class). The system will display flight details such as flight number, departure time, arrival time, duration, and fare options. The airline staff and administrators also need access to the system to manage flight schedules, monitor seat availability, and update pricing based on demand and promotions. Customers should also be able to modify or cancel their bookings, subject to the airline's cancellation policy.	**10 Marks**	**L3**	**CO2**
		Or			
11.	**a.**	Apply your understanding of UML use case modeling by explaining the meaning of a use case and its key components.	**10 Marks**	**L3**	**CO2**

		Then, construct a use case diagram for an Online Airline Ticket Reservation System that supports functionalities such as flight search, authentication, booking availability, payments, and cancellation process. Ensure to include all relevant actors and represent relationships using <<include>> and <<extend>> properties.			

12.	**a.**	Apply the Common Class Pattern approach to a ride-sharing application by identifying suitable classes, assigning their responsibilities, and modeling their collaborations. Illustrate your answer with appropriate examples.	**10 Marks**	**L3**	**CO2**
		Or			
13.	**a.**	Apply the concept of classes and their components to the given scenario. Define a class and its components, and then design a UML class diagram for an ATM Transaction System. When the customer inserts the bank or credit card in the ATM's card reader, the entry action i.e read card is performed by the ATM machine. If the card is not valid then the machine will perform exit action. After the card is being read successfully, the ATM machine will ask for Pin. Then the customer enters the pin and ATM machine then reads pin. If the pin entered is not valid then machine will perform exit action. If the pin entered is valid, then the machine further process towards transaction. After successful transaction, machine undergoes the exit action i.e., eject card that discharges the customer's card	**10 Marks**	**L3**	**CO2**