Graphic Era
HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhineyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

Mid Term (Odd) Semester Examination September 2025

Name of the Program: BCA

Semester: V

Name of the Course: Object Oriented Analysis & Design

Course Code: TBC 505 (2)

Time: 1-1/2 Hour

Maximum Marks: 50

Note:

i. Answer **all the questions** by choosing *any one of the sub questions*.
ii. Each question carries 10 marks.

Q1	(10 Marks)	Specify CO/Cos
(a)	Explain inheritance, polymorphism, encapsulation, and abstraction with suitable examples.	CO-1
	OR	
(b)	Illustrate association and link in UML class modeling using an example diagram	
Q2	(10 Marks)	
(a)	Differentiate between Link and Association with suitable examples.	CO-1
	OR	
(b)	Assess the benefits and challenges of Object-Oriented Analysis and Design (OOAD).	
Q3	(10 Marks)	CO-1 & CO-2
(a)	Construct a state diagram for an online food ordering system, showing states (e.g., Order Placed, Payment Pending, Order Confirmed, Preparing, Out for Delivery, Delivered), events, and transitions	
	OR	
(b)	Compare sequence diagram and activity diagram.	d
Q4	(10 Marks)	CO-2

(a)	Design the State Transition Diagram for an ATM system.		
	OR		
(b)	Develop a UML activity diagram for the "Enroll in University" or "Purchase Order" process.		
Q5		**(10 Marks)**	
(a)	List and describe Basic Building Blocks of the UML.		CO-2
	OR		
(b)	Explain the Interaction Modelling in detail.		

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