Reg. No. : | | | | | | | | | | | | |

Question Paper Code: R4D02

B.E./B.Tech. DEGREE EXAMINATION, NOV 2025

Fourth Semester

Computer Science and Business Systems

R21UCB402 - SOFTWARE DESIGN WITH UML

(Regulations R2021)

Duration: Three hours | Maximum: 100 Marks

Answer ALL Questions

PART - A (10 x 2 = 20 Marks)

1.	What are the three ways to apply UML?	CO1- U
2.	What are the three kinds of Actors?	CO1- U
3.	What is Association? Explain with an example.	CO1- U
4.	Define an attribute. Explain with an example using UML notation	CO1- U
5.	Compare Activity and state chart diagram. Mention the Elements of an Activity Diagram.	CO1- U
6.	Explain Creator Pattern with an example	CO1- U
7.	Analyze the situation to use Factory method pattern.	CO1- U
8.	What are the steps for mapping design to code?	CO1- U
9.	Differentiate OO integration testing and OO system testing	CO1- U
10.	Define the role of Virtual Memory Manager.	CO1- U

PART – B (5 x 16= 80 Marks)

11.	(a)	Write a problem statement for Railway Ticket Reservation System. Develop use case diagram and discover the use case and actors of this system.	CO2- App	(16)
		Or		
	(b)	Write a problem statement for online movie ticket Reservation System. Develop use case diagram and discover the use case and actors of this system	CO2- App	(16)
12.	(a)	Write a problem statement for Airline ticket Reservation System. Develop Class diagram and discover the notation of this system	CO2- App	(16)

Or

	(b)	Write a problem statement for Course Registration System. Develop Class diagram and discover the notation of this system	CO2- App	(16)
13.	(a)	Write a problem statement for Course Registration System and develop interaction diagram, component diagram and deployment diagram	CO2- App	(16)
		Or		
	(b)	Build a problem statement for a movie ticket system and develop the interaction diagram, component diagram, and deployment diagram for the system.	CO2- App	(16)
14.	(a)	Explain in detail about high cohesion and controller pattern with example.	CO1- U	(16)
		Or		
	(b)	Explain in detail about the GRASP principles.	CO1- U	(16)
15.	(a)	Explain briefly the four phases of OMT model. Explain in detail about OMT Functional Model with example.	CO1- U	(16)
		Or		
	(b)	Discuss in detail about the different types of testing in OOAD.	CO1- U	(16)