Reg. No.																

Question Paper Code	14135

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2025

Fourth Semester

Computer Science and Engineering

(Common to Sixth Semester - Computer and Communication Engineering)

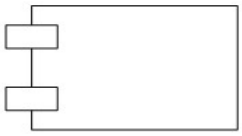
20CSPC403 - OBJECT ORIENTED SOFTWARE ENGINEERING

Regulations - 2020

Duration: 3 Hours | Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	Extreme Programming (XP) is based on (a) Rigorous upfront documentation (b) Pair programming and test-driven development (c) Waterfall methodology (d) Late customer involvement	1	K1	CO1
2.	Which software process model is also called the "classical model" or "linear-sequential model"? (a) Waterfall Model (b) Agile Model (c) Spiral Model (d) Prototyping Model	1	K1	CO1
3.	Which of the following is NOT a key factor in requirements validation? (a) Completeness (b) Consistency (c) Source Code Compilation (d) Feasibility	1	K1	CO2
4.	Which phase of Requirement Engineering ensures that the gathered requirements are correct and complete? (a) Requirement Elicitation (b) Requirement Analysis (c) Requirement Validation (d) Requirement Specification	1	K1	CO2
5.	Select a first phase of the Unified Process Model (a) Elaboration (b) Construction (c) Inception (d) Transition	1	K1	CO3
6.	In UML,Which relationship depicts Inheritance? (a) Include (b) Extend (c) Generalization (d) Association	1	K1	CO3
7.	What type of core-relationship is represented by the symbol in the figure below?  (a) Aggregation (b) Dependency (c) Generalization (d) Association	1	K1	CO4
8.	Select the view which is shown in the Object diagram. (a) Logical (b) Dynamic (c) Static (d) Process	1	K1	CO4
9.	Choose a core element of UML is being shown in the figure.  (a) Node (b) Interface (c) Class (d) Component	1	K1	CO5
10.	Reverse engineering of data focuses on (a) Internal data structures (b) Database structures (c) ALL of the mentioned (d) None of the mentioned	1	K1	CO6

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

11.	Define software process.	2	K1	CO1
12.	State the purpose of Agile Process.	2	K1	CO1
13.	List out the characteristics of good SRS.	2	K1	CO2
14.	How the requirements are validated?	2	K1	CO2

15.	Why is the Inception phase important for project success?		2	K1	CO3
16.	Show how Generalization supports inheritance in Object-Oriented Design.		2	K2	CO3
17.	Define the term UML.		2	K1	CO4
18.	Define events,states and transitions with an example.		2	K1	CO4
19.	List the purpose and usage of UML Package Diagrams.		2	K1	CO5
20.	Compare and contrast coupling and cohesion.		2	K2	CO5
21.	Recall the Big Bang approach.		2	K1	CO6
22.	Differentiate between white box and black box testing.		2	K2	CO6

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

23.	a)	Explain in detail about the functions of Rapid Application Development model (RAD) with a neat sketch.	11	K2	CO1
		OR			
	b)	Discuss in detail about the process model which is best suited for risk management. List its advantages and disadvantages.	11	K2	CO1
24.	a)	Summarize about Software Requirement Specification (SRS) and its different components.	11	K2	CO2
		OR			
	b) (i)	Explain the concept of graphical design notation.	6	K2	CO2
	(ii)	Discuss Tabular Design Notation in detail.	5	K2	CO2
25.	a)	Develop a System Sequence Diagram, Collaboration Diagram, State Machine Diagram and Activity Diagram for an ATM system.	11	K3	CO3
		OR			
	b)	Identify the difference between Conceptual Classes and Description Classes and discuss with suitable examples.	11	K3	CO3
26.	a)	Explain with an example, how Use Case Modeling is used to describe the functional requirements. Identify the actors, scenario and Use Case for the example.	11	K2	CO4
		OR			
	b) (i)	Outline a Use Case Diagram for the ATM system where every user must validate their PIN number to make a transaction, with a maximum of 3 attempts.	5	K2	CO4
	(ii)	Summarize the "Validate User" use case and its steps in the context of the ATM system.	6	K2	CO4
27.	a)	Explain with an example about creator and Information Expert GRASP patterns.	11	K2	CO5
		OR			
	b) (i)	Outline when it is suitable to use UML Deployment and Component diagrams.	6	K2	CO5
	(ii)	Demonstrate the use of Deployment and Component diagrams in modeling a banking application.	5	K2	CO5
28.	a)	Illustrate any two test cases used in developing and testing ATM System.	11	K2	CO6
		OR			
	b)	Summarize about White Box testing types and techniques with an example.	11	K2	CO6