Register No : _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

MCA DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025

First Semester

Master of Computer Applications

PMCT2402 – Object Oriented Software Engineering

Regulations – 2024

Duration : 3 Hrs *Maximum : 100 Marks*

*PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)*

Q.No	*Questions*	*BTL*	*CO*	*Marks*
1.	Differentiate iterative and incremental process.	L2	1	2
2.	List down the activities of requirements elicitation.	L2	1	2
3.	Compare “includes” and “extends” relationships used in use cases. Specify an example.	L2	2	2
4.	Describe state, behavior and identify with respect to an object taking a suitable example.	L1	2	2
5.	How does the application of the concepts of coupling and cohesion help to produce good object-oriented design?	L1	3	2
6.	Differentiate between aggregation and composition.	L2	3	2
7.	List down the test performed during performance testing.	L1	4	2
8.	Define mutation testing.	L1	4	2
9.	State the difference between Function Points and Object-Oriented Function Points.	L2	5	2
10.	What are the ways a client evaluates the system during acceptance testing?	L1	5	2

*PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)*

Q.No			*Questions*	*BLT*	*CO*	*Marks*
11.	a	i	“Unified software development process is use-case driven, architecture-centric, iterative and incremental” – Justify by elaborating on the process.	L4	1	8
		ii	Compare and contrast the Waterfall Model and Agile Process. Highlight strengths and weaknesses of each.	L2	1	8
			Or			
	b	i	How does object-oriented software development promote reusability?	L4	1	8
		ii	Explain object orientation with its key principles using suitable examples.	L2	1	8
12.	a	i	Explain the primary modelling elements of the unified process.	L3	2	8
		ii	Identify the analysis classes of railway ticket reservation system. Draw the collaboration diagram for any two use cases.	L4	2	8
			Or			

	b	i	Passengers use Automatic Ticket distribute to purchase tickets. The customer has to pay the cash within a certain amount of time, otherwise the transaction is cancelled. A bus company changes the ticket fares periodically. Identify the actors and use cases and draw the use case diagram.	L3	2	8
		ii	Discuss the strengths and weaknesses of developers during the requirements elicitation activity.	L4	2	8
13.	a	i	Describe the role of coupling and cohesion in designing the object-oriented system.	L3	3	8
		ii	Explain the importance of static modelling in requirement analysis and system design.	L2	3	8
			Or			
	b	i	Design a UML class diagram for a Hospital Management System, applying design principles.	L3	3	8
		ii	Explain the Information Expert and Controller patterns of GRASP with examples.	L2	3	8
14.	a	i	Analyze the advantages and limitations of using automated tools for object-oriented software testing.	L4	4	8
		ii	Describe the process of regression testing.	L2	4	8
			Or			
	b	i	Examine the levels of testing in detail, and suggest which levels are more critical in object-oriented software.	L4	4	8
		ii	Illustrate how regression testing is integrated into agile development processes.	L2	4	8
15.	a		Compare the Lorenz & Kidd estimation method with the Use Case Points method in terms of accuracy and applicability.	L2	5	16
			Or			
	b	i	Compare the use of static vs dynamic metrics in measuring object-oriented software quality.	L2	5	8
		ii	Explain how object-oriented metrics can be used to guide refactoring and improve maintainability.	L2	5	8