

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025

Sixth Semester

Information Technology

CCS356- Object Oriented Software Engineering

(Common to Computer Science and Engineering)

Regulations - 2021

Duration : 3 Hrs

Maximum : 100 Marks

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

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	List two benefits of adopting an Agile process in software development.	L1	1	2
2.	What is the role of a Scrum Master in an Agile team, and how do they contribute to the team's success?	L1	1	2
3.	Name two techniques used in requirements gathering and write their purpose.	L1	2	2
4.	Define Finite State Machine (FSM) and provide a simple example of its application in software engineering.	L1	2	2
5.	Define Proxy pattern, and in what scenarios might it be useful?	L1	3	2
6.	Define publish-subscribe design pattern, and how does it facilitate communication between components in a software system?	L1	3	2
7.	Compare static and dynamic program analysis.	L2	4	2
8.	Define debugging and outline the general steps involved in the debugging process.	L1	4	2
9.	Name two tools commonly used in software configuration management and state their primary functions.	L1	5	2
10.	Why project scheduling is essential for effective project management?	L1	5	2

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

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a i Explain the key phases of the software development lifecycle (SDLC).	L2	1	8
	ii Explain the main principles of Extreme Programming (XP).	L2	1	8
	Or			
	b i What is Agile methodology? Discuss its core values and principles as outlined in the Agile Manifesto.	L2	1	8
	ii Compare Agile and traditional (plan-driven) software development approaches in terms of project scope, change management, and stakeholder engagement.	L2	1	8
12.	a i Assume that you are asked to developing an online bookstore. Create a use case model that identifies at least five key actors and their interactions with the system.	L3	2	8
	ii Make a class diagram for online bookstore that includes at least five classes. Define the attributes and methods for each class and illustrate their relationships (e.g., inheritance, associations).	L3	2	8

Or

	b	Construct a level 0 DFD for the online bookstore system. Identify the main processes, data stores, and external entities involved in the system. Explain how data flows between these components.	L3	2	16
13.	a	What are design patterns, and why are they important in software design? Choose three design patterns (e.g., Singleton, Factory, Observer) and explain their purpose, structure, and typical use cases.	L3	3	16
		Or			
	b	Describe the Model-View-Controller (MVC) architectural pattern. How does MVC promote separation of concerns in software applications? Provide an example of a system where MVC could be effectively implemented.	L3	3	16
14.	a	Assume that you are asked to testing the shopping cart feature of an e-commerce website using black box testing techniques. Identify and describe at least five test cases you would execute to verify the functionality of adding, removing, and checking out items.	L3	4	16
		Or			
	b	Assume that you are a developer responsible for testing a function that calculates the factorial of a number. Analyze how you would perform white box testing on this function. What specific aspects of the code would you examine, and what test cases would you design based on your analysis?	L3	4	16
15.	a i	Explain the practices involved in software configuration management (SCM).	L2	5	8
	ii	Explain the significance of software project management in ensuring project success.	L2	5	8
		Or			
	b	Explain different techniques for project scheduling, such as Gantt charts and Critical Path Method (CPM). How do these techniques assist project managers in tracking progress and resource allocation? Provide an example of how you would apply one of these techniques in a software project.	L2	5	16