

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***M.E. DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2025***Second Semester**Computer Science and Engineering***PCST2424 - Advanced Software Engineering***Regulations – 2024***Duration : 3 Hrs****Maximum : 100 Marks****PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

Q.No	Questions	BLT	CO	Marks
1.	What are some of the issues that lead to an XP debate?	L2	1	2
2.	Distinguish between the term inception, elicitation, & elaboration with reference to requirements?	L2	1	2
3.	“A system must be loosely coupled and highly cohesive”. Justify.	L4	2	2
4.	How do you apply modularization criteria for a monolithic software?	L2	2	2
5.	Compare Redundancy and Diversity.	L4	3	2
6.	What are the types of threats that have to be considered in resilience planning?	L1	3	2
7.	Identify the key benefits of adopting a service-oriented approach in software engineering.	L2	4	2
8.	Classify the factors that influence the lifetime of a system.	L1	4	2
9.	What is a good test and list any two principles of a good design?	L4	5	2
10.	List the elements of a configuration management system.	L1	5	2

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

Q.No	Questions	BLT	CO	Marks
11. a i	List all generic process framework and explain umbrella activities in detail.	L2	1	08
i	Explain in detail about spiral model with a neat sketch and describe why this model comes under both evolutionary and RAD models.	L2	1	08
Or				
b i	Assume that Most agile process models recommend face to face communication. Yet today, members of a software team and their customers may be geographically separated from one another. Do you think this implies that geographical separation is something to avoid? Can you think of ways to overcome this problem?	L4	1	10

	i	Is it possible to begin coding immediately after an analysis model has been created? Explain your answer and then argue the counterpoint.	L4	1	06	
12.	a	i	Explain the design process and list the design concepts in detail?	L2	2	08
		i		L2	2	08
		i	Illustrate in detail about any four Architectural styles.			
			Or			
	b	i	Elucidate the steps involved in transform mapping.	L1	2	08
		i		L2	2	08
		i	Discuss the concept of Graphical Design notation.			
13.	a	i	Describe the security dimensions and security levels that have to be considered in secure systems engineering.	L2	3	6
		i	In the insulin pump system, the user has to change the needle and insulin supply at regular intervals and may also change the maximum single dose and the maximum daily dose that may be administered. Suggest three user errors that might occur and propose safety requirements that would avoid these errors resulting in an accident.	L4	3	10
		i				
			Or			
	b	i	Should software engineers working on the specification and development of safety-related systems be professionally certified or licensed in some way? Explain your reasoning.	L4	3	06
		i	You are an engineer in charge of the development of a small, safety-critical train control system, which must be demonstrably safe and secure. You suggest that formal methods should be used in the development of this system, but your manager is skeptical of this approach. Write a report highlighting the benefits of formal methods and presenting a case for their use in this project.	L4	3	10
		i				
14.	a	i	Enumerate the key stages in the process of system construction by composition.	L1	4	08
		i	Identify possible stimuli and the expected responses for an embedded system that controls a home refrigerator or a domestic washing machine.	L3	4	08
		i				
			Or			
	b	i	Sketch the Layered structure of sociotechnical systems.	L1	4	08
		i	Enumerate the essential activities involved in a real-time software design process.	L2	4	08
		i				
15.	a	i	Discuss the differences between black box and white box testing models.	L2	5	06
		i	Write elaborately on unit testing. How do you develop test suites?	L2	5	10

i

Or

b	i	Elucidate on Content management system.	L2	5	08
	i	Develop a checklist for use during configuration audits.	L6	5	08
	j				