

Model Question Paper
Third Semester BE Degree Examination
Software Engineering

Time: 3 Hours

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M: Marks, L: RBT (Revised Bloom's Taxonomy) level, C: Course outcomes.*

Module -1			M	L	C
Q1	a.	Define software engineering. Explain software process framework.	06	L2	CO1
	b.	Explain the different types of myths in software engineering, providing 2 examples for each.	06	L2	CO1
	c.	Explain the Spiral Evolutionary Model in software development. Describe its key phases and how they contribute to managing risks throughout the development process.	08	L2	CO1
OR					
Q2	a.	Explain different process flow with a neat diagram.	06	L2	CO1
	b.	With a neat diagram, explain the waterfall model of software development process. List the advantages and disadvantages of waterfall model.	06	L2	CO1
	c.	Illustrate the suitability of the Waterfall model for the development of a food delivery application, considering both benefits and potential challenges. In your answer, compare how the waterfall model's linear structure impacts development, testing, and deployment compared to iterative methodologies. Propose scenarios where the Waterfall model may be preferred over iterative approaches, and explain why?	08	L2	CO1
Module- 2					
Q3	a.	How would you apply the principles that guide the Modelling framework activity in a software development project? Explain how these principles can be integrated to improve the design and understanding of the system being developed.	10	L2	CO2
	b.	Illustrate how you would apply the principles and practices of Extreme Programming (XP) to a software development project. How XP helps overcome common challenges in the development process and demonstrate the impact of active customer involvement and continuous feedback on the project's success.	10	L2	CO2
OR					
Q4	a.	How would you apply the guiding principles of coding and testing within a software development framework? Explain how these principles can be effectively integrated to enhance code quality and streamline the testing process.	10	L2	CO2
	b.	Illustrate how effectively you can implement the Scrum framework in a software development project, starting from the initial planning phase to project completion. Provide a detailed explanation of the key components of the Scrum model and describe the Scrum process with a focus on the sprint cycle.	10	L2	CO2

Module – 3

Q5	a.	You have been tasked with developing a Food Ordering Application like Zomato. The system needs to cater to multiple user roles, each with unique needs and interactions. What user roles can you identify for this application, considering all the stakeholders who might interact with the system? Based on these roles, list 10 user stories that capture key functionalities and user interactions within the app.	10	L3	CO3
	b.	Design a detailed activity diagram for a Library Management System, highlighting key activities involved in user interactions and system processes. Indicate decision points, parallel activities, and control flows within the diagram. Explain how each activity contributes to achieving core system objectives, such as efficient book management, user satisfaction, and resource accessibility	10	L3	CO3

OR

Q6	a.	Imagine you have been tasked with developing a business application for a general store. To ensure the system meets both the business needs and user expectations, you need to gather a comprehensive set of functional and non-functional requirements. Identify at least 15 key questions you would ask stakeholders to capture the necessary functional and non-functional requirements for the application?	10	L3	CO3
	b.	Design a detailed usecase diagram for a Library Management System. Identify the key actors, usecases and explain the relationships between them. Demonstrate how the system would handle different user roles and justify the inclusion of each usecase. Illustrate how each usecase aligns with the system's goal to improve library services and user experience.	10	L3	CO3

Module – 4

Q7	a.	Imagine you are a new software engineer tasked with developing a Flight ticket booking system. Reflecting on M. A. Jackson's statement, "The beginning of wisdom for a software engineer is to recognize the difference between getting a program to work and getting it right. Which fundamental design concepts would you prioritize to ensure not just functionality, but also a well-structured, maintainable, and reliable software solution? How would you apply these concepts in your design process?	10	L3	CO4
	b.	Assume that you are tasked with designing a user interface for an online shopping application like flipkart. To create an effective interface, it is essential to understand several key elements: (1) the people (end users) who will interact with the system, (2) the tasks they need to perform, (3) the content presented within the interface, and (4) the environment in which the tasks will occur. What aspects you will keep in mind while designing user interface for this application? How will you ensure user is in control?	10	L3	CO4

OR

Q8	a.	Imagine you're designing a MITE Student Management System, and your team decides to choose an architectural style to guide the overall structure and development process. Select an architectural style that shapes the system's components, communication, and constraints. Based on this analogy, design various software architectural styles, highlighting the components they involve, how they enable communication and coordination, and the constraints that guide their integration.	10	L3	CO4
	b.	Assume that you are assigned the task of designing a user interface for Instagram. According to Dix's argument, an effective interface should answer three essential questions: "Where am I? What can I do now? Where have I been and where can I go?" Given this framework, how would you approach designing an interface that is both intuitive and user-friendly? How you would address these three questions specifically within the context of WebApp and mobile interface design. What	10	L3	CO4

		design principles and elements would you incorporate to enhance the user experience, ensuring smooth navigation and clarity of purpose throughout the application?			
Module – 5					
Q9	a.	Imagine you are leading a software development team that is preparing for a formal technical review (FTR) of a new module. What steps would you take to ensure the review process is effective, and how would you address common issues like time constraints and participant engagement?	10	L3	CO5
	b.	Model different testing strategies (such as unit, integration, system, and acceptance testing) to maximize reliability and safety for a hospital management system.	10	L3	CO5
OR					
Q10	a.	Integrate Software Quality Assurance (SQA) practices throughout the development lifecycle to ensure regulatory compliance and minimize critical errors as a manager for a Software development team for a MITE Bank.	10	L3	CO5
	b.	Imagine you are working as TEST Lead for Amazon E-Commerce platform. Implement an effective testing strategy that includes both white-box and black-box testing techniques to ensure comprehensive coverage across all functionalities.	10	L3	CO5
