



Second Semester MCA Degree Examination, June/July 2025 Software Engineering

Max. Marks: 100

*Notes: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1				M	L	C
Q.1	a.	Discuss the process involved in waterfall and incremental development model with advantages and disadvantages.	10	L1	CO1	
	b.	Explain the essential attributes of a good software and discuss the key challenges facing software engineering professionals.	10	L1	CO1	
OR						
Q.2	a.	Explain Prototyping model of software development with a neat diagram and discuss the different types of prototype models.	10	L2	CO1	
	b.	Explain the phases of RUP with a neat diagram.	10	L2	CO1	
Module – 2						
Q.3	a.	Define Requirements Engineering. Explain the activities of requirement engineering process.	10	L2	CO3	
	b.	Explain the different techniques for requirement validation.	10	L2	CO3	
OR						
Q.4	a.	Explain the format and characteristics of good software requirement specification.	10	L2	CO4	
	b.	What are functional and non – functional requirements? Explain the different types of non – functional requirements.	10	L2	CO4	
Module – 3						
Q.5	a.	Define the term model and mention the need for modeling. Describe the three models which support for modeling system in different view points.	10	L2	CO3	
	b.	Explain Association Class, Qualified Association and Reflexive Association with example.	10	L2	CO3	
OR						
Q.6	a.	Write short notes on : i) Multiplication ii) Reification iii) Visibility.	10	L1	CO1	
	b.	Draw class diagram for Railway Reservation System and discuss functionality of the modules.	10	L2	CO4	

Module – 4					
Q.7	a.	What is a Design Pattern? Explain four elements of design pattern.	10	L1	CO5
	b.	Draw and explain the state machine model of simple microwave oven.	10	L1	CO5
OR					
Q.8	a.	Discuss how to apply constraints in class diagram.	10	L2	CO4
	b.	Describe propagation of operation with suitable example.	10	L1	CO3
Module – 5					
Q.9	a.	State and explain Development Testing and its three levels – Unit testing , Components testing and System testing.	10	L1	CO3
	b.	With the help of a neat diagram, explain various stages of acceptance testing process.	10	L1	CO3
OR					
Q.10	a.	Differentiate between : i) Verification and Validation ii) Alpha and Beta testing.	10	L1	CO3
	b.	Define Program Evolution Dynamics. Discuss Lehman's Law of program evolution dynamics.	10	L1	CO3
