USN

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

Time: 3 hrs.

Max. Marks: 100

Note: 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.	Explain the need and importance of software engineering in modern systems development.	10	L2	C1
	b.	Discuss the various attributes of software quality. Why are they essential for successful software delivery?	10	L2	C1
OR					
Q.2	a.	Explain specialized process models such as Component-Based Development and Concurrent Model.	10	L2	C2
	b.	Describe the advantages and challenges of adopting agile methodology.	5	L2	C2
	c.	Explain the differences between Scrum and Extreme Programming.	5	L2	C1
Module – 2					
Q.3	a.	Explain the need for requirement analysis and specification in software development.	10	L3	C1
	b.	Describe the process of requirements gathering and analysis.	10	L3	C2
OR					
Q.4	a.	Define formal system specification and discuss its advantages	5	L2	C1
	b.	How are FSMs used in software modeling and system design?	5	L2	C2
	c.	What are CASE tools? Describe their types and applications.	10	L2	C1
Module – 3					
Q.5	a.	Explain the importance of software design in the software development life cycle. Describe the various activities involved in the design process.	10	L3	C2
	b.	Describe the Model-View-Controller (MVC) design pattern. How does MVC promote separation of concerns?	10	L3	C3
OR					
Q.6	a.	Describe the Client-Server architecture. Discuss how it is different from a Tiered architecture.	10	L3	C4
	b.	Discuss the challenges in designing user interfaces. How can UI design impact user experience?	10	L3	C4

Module – 4					
Q.7	a.	Describe various black box testing techniques. How are equivalence partitioning and boundary value analysis used in black box testing?	10	L3	C3
	b.	Explain the difference between integration testing and system testing with real-world examples.	10	L2	C2
OR					
Q.8	a.	Describe the challenges of regression testing in large software projects. How can automated tools help?	10	L3	C2
	b.	Discuss common debugging techniques and tools used by software developers.	10	L3	C3
Module – 5					
Q.9	a.	Explain the importance of Software Project Management in the development life cycle of a software product. Discuss the key responsibilities of a project manager.	10	L2	C2
	b.	Discuss the Critical Path Method (CPM) and its significance in determining the project duration and key tasks.	10	L3	C3
OR					
Q.10	a.	Discuss the role of the cloud as a platform in implementing DevOps. How does it enhance scalability, availability, and automation?	10	L3	C3
	b.	Present a case study that demonstrates the challenges faced in project scheduling and how those challenges were addressed using software project management principles.	10	L3	C3

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