Subject Code: BMC302

MCA
(SEM III) THEORY EXAMINATION 2025-26
SOFTWARE ENGINEERING

TIME: 3 HRS **M.MARKS: 70**

Note: Attempt all Sections. In case of any missing data; choose suitably.

SECTION A

1. Attempt *all* questions in brief. **02 x 7 = 14**

Q No.	Question	CO	Level
a.	Define Software Process.	1	K1
b.	List any four characteristics of software.	1	K1
c	What is Evolutionary Development Model?	1	K2
d.	Why is Requirements Engineering important in software development?.	2	K1
e.	What is a Decision Table?	2	K2
f.	Define Cohesion in software design.	3	K2
g.	What is Halstead's Software Science?	3	K2

SECTION B

2. Attempt any *three* of the following: **07 x 3 = 21**

Q No.	Question	CO	Level
a.	Explain Prototype Model with advantages and disadvantages.	1	K2
b.	Explain SRS structure. Describe desirable characteristics of a good SRS.	2	K2
c.	Explain Coupling and Cohesion with suitable diagrams.	3	K3
d.	Discuss types of software testing: Unit, Integration, System, and Acceptance.	4	K2
e.	Explain project scheduling and tracking. What is the role of milestones?	5	K3

SECTION C

3. Attempt any *one* part of the following: **07 x 1 = 07**

Q No.	Question	CO	Level
a.	Explain Waterfall and Spiral Models. Compare them on major factors.	1	K2
b.	Describe various software quality attributes with examples.	1	K2

4. Attempt any *one* part of the following: **07 x 1 = 07**

Q No.	Question	CO	Level
a.	Explain Requirement Engineering in detail. Describe its phases: Elicitation, Analysis, Documentation, Validation, and Management.	2	K2
b.	Explain Verification & Validation (V&V). Discuss SQA activities and ISO 9000 quality standards.	2	K2

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5. Attempt any *one* part of the following: **07 x 1 = 07**

Q No.	Question	CO	Level
a.	Explain Object-Oriented Design concepts: Classes, Objects, Inheritance, and Polymorphism.	3	K3
b.	What is Cyclomatic Complexity? Write steps to calculate it and compute V(G) for a given control flow graph.	3	K3

6. Attempt any *one* part of the following: **07 x 1 = 07**

Q No.	Question	CO	Level
a.	Explain Top-Down and Bottom-Up Integration Testing strategies with examples.	4	K3
b.	Describe Black Box Testing techniques: • Equivalence Class Partitioning • Boundary Value Analysis	4	K3

7. Attempt any *one* part of the following: **07 x 1 = 07**

Q No.	Question	CO	Level
a.	Explain Risk Management in software engineering. Describe risk identification and assessment.	5	K3
b.	What is Software Configuration Management (SCM)? Explain version control and change control processes.	5	K2

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