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MCA
(SEM III) THEORY EXAMINATION 2025-26
SOFTWARE TESTING & QUALITY ASSURANCE

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.	What is meant by “testing as an engineering activity”?	1	K1
b.	What is a defect repository?	1	K1
c.	Differentiate between static testing and structural testing.	2	K2
d.	Define code coverage.	2	K2
e.	What is TQM?	3	K1
f.	What is an SQA plan?	4	K1
g.	What is ISO 9000 series?	5	K1

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

a.	Explain software testing as a process. Discuss its phases and activities in detail.	1	K2
b.	Explain the white-box approach to test design. Discuss various white-box techniques.	2	K3
c.	Explain the need for test automation. Describe the architecture and design considerations.	3	K2
d.	Discuss software quality in business context with real-time examples.	4	K3
e.	Compare CMM and CMMI models in detail.	5	K2

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

a.	Discuss the origins of defects in software systems. Explain the major sources.	1	K3
b.	Discuss the responsibilities of a software tester in a development organization.	1	K3

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

a.	Describe code functional testing, coverage criteria, and control flow graphs.	2	K2
b.	What are configuration and compatibility testing? Explain with case scenarios.	2	K2

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

a.	Describe the scope and limitations of software test automation.	3	K3
b.	Explain FMEA with process steps and benefits.	3	K3

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

a.	Describe the 7 QC tools with diagrams and applications.	4	K4
b.	Discuss modern tools used for improving software quality.	4	K4

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

a.	Explain PSP and TSP with examples and benefits.	5	K3
b.	What is Cleanroom software engineering? Discuss its principles and processes.	5	K2