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MTECH
(SEM I) THEORY EXAMINATION 2025-26
SOFTWARE TESTING & AUDITING

TIME: 3 HRS

M.MARKS: 70

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief.

2 x 7 = 14

Q no.	Question
a.	How does treating testing as a disciplined process contribute to overall software quality?
b.	How does a defined testing process help in defect prevention rather than only defect detection?
c.	Explain white box testing and test adequacy criteria.
d.	Why is complete path coverage often impractical in real software systems?
e.	Explain the need for multiple levels of testing in software development.
f.	Compare different integration testing strategies.
g.	Why is introducing a test specialist necessary in modern software projects?

SECTION B

2. Attempt any three of the following:

07 x 3 = 21

a.	Analyze the origins of software defects. Explain how defects introduced at different stages of the software life cycle impact testing effort and cost.
b.	Explain the importance of test case design strategies in software testing. Why is a smarter tester expected to combine multiple strategies instead of relying on one?
c.	Discuss unit testing in detail. Explain unit test planning, designing unit tests, and the role of a test harness.
d.	Describe the components of a test plan. Why are test plan attachments and locating test items important for effective test management?
e.	Discuss the objectives of a software audit. How do audits contribute to process improvement and compliance?

SECTION C

3. Attempt any one part of the following:

7x1=7

a.	Describe various defect classes with suitable examples. How does defect classification support effective test design and defect management?
b.	Explain the concept of a defect repository. Discuss how developers and testers can collaboratively build and maintain it, and how it improves future test design.

4. Attempt any one part of the following:

7x1=7

a.	Compare random testing with systematic black box testing techniques. In what situations can random testing be effective, and where does it fail?
b.	Describe the black box approach to test case design. Explain equivalence class partitioning and boundary value analysis with real world examples.

5. Attempt any one part of the following:

7x1=7



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a.	Explain alpha, beta, and acceptance testing. How do these tests differ in objectives, participants, and execution environment?
b.	Describe system testing and its different types. How is regression testing planned and executed in evolving software systems?

6. Attempt any one part of the following: 7x1=7

a.	Explain measurements and milestones used for controlling and monitoring testing activities. How do status meetings and reports support management decisions?
b.	Describe software configuration management in the context of testing. Explain different types of reviews and how a structured review program is developed.

7. Attempt any one part of the following: 7x1=7

a.	Explain the software audit process step by step. What challenges are commonly faced during audits, and how can they be handled?
b.	Compare auditing and testing as quality assurance activities. How do they complement each other in ensuring software quality?

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