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Printed Page:-4 **Subject Code:- BMCA0314**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)
MCA
SEM: III - THEORY EXAMINATION (2025 - 2026)
Subject: Advance Software Testing

Time: 3 Hours **Max. Marks: 100**

General Instructions:

IMP: *Verify that you have received the question paper with the correct course, code, branch etc.*

1. *This Question paper comprises of* ***three Sections -A, B, & C.*** *It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.*

2. *Maximum marks for each question are indicated on right -hand side of each question.*

3. *Illustrate your answers with neat sketches wherever necessary.*

4. *Assume suitable data if necessary.*

5. *Preferably, write the answers in sequential order.*

6. *No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.*

SECTION-A 20

1. Attempt all parts:-

1-a. Identify the purpose of Test Closure phase is _____.(CO1,K2) 1

(a) To execute test cases
(b) To close the defect log
(c) To finalize the testing process
(d) To analyze requirements

1-b. The primary output of the Requirement Analysis phase is _____.(CO1,K2) 1

(a) Test Cases
(b) Test Plan
(c) Requirement Specification
(d) Defect Report

1-c. The purpose of risk assessment is(CO2,K2) 1

(a) To execute only automated tests
(b) To estimate impact and likelihood of risks
(c) To remove low-priority defects
(d) To schedule team meetings

1-d. Mitigation strategy for resource shortage may include(CO2,K3) 1

(a) Removing defect tracking
(b) Hiring additional testers
(c) Stopping test reporting
(d) Avoiding automation

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1-e. Checklist-based testing ensures coverage of what? (CO3,K2) 1

(a) Required functionality
(b) CPU utilization
(c) Memory leaks
(d) Compiler optimization

1-f. In pairwise testing, the test case count is minimized by covering what? (CO3,K3) 1

(a) All possible input pairs
(b) Only valid values
(c) Only stress conditions
(d) Only syntax checks

1-g. Business rules are validated through which approach in business domain testing?(CO4,K2) 1

(a) Code reviews
(b) Requirement-based test cases
(c) UI analysis
(d) Load testing

1-h. Portability testing checks compatibility with which aspect?(CO4,K2) 1

(a) Documentation
(b) Multiple platforms
(c) Debugging tools
(d) Encryption methods

1-i. Availability of quality test data enhances which testing activity most?(CO5,K3) 1

(a) Functional coverage
(b) Cost saving
(c) UI review
(d) Documentation

1-j. Selenium is associated with which main automation phase?(CO5,K3) 1

(a) Planning
(b) Documentation
(c) Cost tracking
(d) Test execution

2. Attempt all parts:-

2.a. Explain the purpose of the Test Closure phase in STLC.(CO1,K3) 2

2.b. Explain the importance of risk-based testing in software projects.(CO2,K2) 2

2.c. Explain error guessing technique in software testing. (CO3,K2) 2

2.d. Analyze the impact of functional correctness on overall software quality.(CO4,K3) 2

2.e. Discuss checklist-based reviews in terms of reliability and accuracy.(CO5,K2) 2

SECTION-B 30

3. Attempt all parts:-

3.a. Answer any one of the following:-

3.a.(i)	Illustrate the charactristics of STLC.(CO1,K3)	6
3.a.(ii)	Describe the various specification-based testing techniques with suitable examples.(CO1,K2)	6
3.b. Answer any one of the following:-		
3.b.(i)	Analyze why traditional testing may fail in projects with high uncertainty compared to risk-based testing.(CO2,K4)	6
3.b.(ii)	Discuss the role of continuous risk-based improvement in ensuring sustainable software quality over time.(CO2,K2)	6
3.c. Answer any one of the following:-		
3.c.(i)	Design equivalence partitions and boundary values for testing an online examination system that accepts scores between 0 and 200. (CO3,K3)	6
3.c.(ii)	Illustrate with examples how exploratory testing and error guessing can complement each other in uncovering defects. (CO3,K3)	6
3.d. Answer any one of the following:-		
3.d.(i)	Explain the role of domain knowledge in designing effective business domain test cases.(CO4,K3)	6
3.d.(ii)	Explain how functional completeness testing helps in early detection and prevention of critical defects.(CO4,K4)	6
3.e. Answer any one of the following:-		
3.e.(i)	How do requirements reviews help in identifying defects early in the software development lifecycle?(CO5,K3)	6
3.e.(ii)	Compare static testing tools with dynamic testing tools and their use cases.(CO5,K4)	6

SECTION-C 50

4. Answer any one of the following:-

4-a.	Discuss the term Software Requirements, Business Requirements and Functional Design Document.(CO1,K3)	10
4-b.	Compare between Statement Coverage Testing and Decision Coverage Testing with example.(CO1,K4)	10

5. Answer any one of the following:-

5-a.	Discuss the advantages of using risk-based testing over traditional testing approaches.(CO2,K3)	10
5-b.	Describe the different types of risks commonly encountered during software project development.(CO2,K3)	10

6. Answer any one of the following:-

6-a.	Analyze the application of equivalence partitioning, boundary value analysis, and state transition testing in designing effective test cases for an online voting system. (CO3,K4)	10
6-b.	Examine how error guessing and checklist-based testing can be systematically applied to improve login module reliability. (CO3,K4)	10

7. Answer any one of the following:-

7-a.	Compare functional correctness testing and usability testing, providing real-world	10

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	business domain examples.(CO4,K4)	
7-b.	Identify and analyze the key quality characteristics relevant to business domain testing, such as reliability, usability, maintainability, portability, and security. Explain how each characteristic affects testing strategies and outcomes in enterprise applications.(CO4,K4)	10

8. Answer any one of the following:-

8-a.	Apply the concept of reviews to improve software quality in a project.(CO5,K3)	10
8-b.	Examine the impact of implementing automated tools and techniques on the lifecycle of test design in modern software development.(CO5,K4)	10