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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

MCA (Integrated)

SEM: V - THEORY EXAMINATION (2024 - 2025)

Subject: Software Testing and Applications

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. Which phase of the STLC involves developing a test plan? (CO1,K1)

1

- (a) Test Execution
- (b) Test Design
- (c) Test Planning
- (d) Test Closure

1-b. Which of the following is not a testing phase? (CO1,K1)

1

- (a) Test Planning
- (b) Test Design
- (c) Test Closure
- (d) Test Development

1-c. Which of the following is not part of the Test type? (CO2,K5)

1

- (a) Function testing
- (b) System testing
- (c) Statement testing
- (d) Database testing

1-d. Which of the below testing is related to Non-functional testing? (CO2,K5)

1

- (a) Unit Testing
- (b) Black-box Testing
- (c) Performance Testing

- (d) None of the above
- 1-e. Which of the review technique are documented? (CO3,K3) 1
- (a) Inspection
  - (b) Walk through
  - (c) only 1
  - (d) only 2
- 1-f. Which is not an important goal of a walk through? (CO3,K3) 1
- (a) Knowledge transfer
  - (b) Gather information
  - (c) Discuss alternatives
  - (d) Find defects
- 1-g. A testing strategy that tests the application in the context of an entire system. (CO4,K4) 1
- (a) System
  - (b) Validation
  - (c) Unit
  - (d) Gray box
- 1-h. What do you call testing individual components? (CO4,K4) 1
- (a) system testing
  - (b) unit testing
  - (c) validation testing
  - (d) black box testing
- 1-i. Test estimation techniques are used to: (CO5,K5) 1
- (a) Determine the number of test cases
  - (b) Define the testing schedule
  - (c) Allocate resources for testing
  - (d) All of the above
- 1-j. Test coverage analysis is used to: (CO5,K5) 1
- (a) Determine the number of test cases executed
  - (b) Identify defects
  - (c) Measure the completeness of testing
  - (d) Allocate resources for testing
2. Attempt all parts:-
- 2.a. Explain bugs and defects. (CO1,K1) 2
- 2.b. Explain Performance and Load Testing. (CO2,K5) 2
- 2.c. Describe what things are tested in Static Testing. (CO3,K3) 2
- 2.d. Write short note on black box testing. (CO4,K4) 2

2.e.	Describe the Objectives of Test Organization. (CO5,K5)	2
<b>SECTION-B</b>		30
3. Answer any <u>five</u> of the following:-		
3-a.	Explain testers and developer mindsets in software testing. (CO1,K1)	6
3-b.	Write UI test case on Login Page. (CO1,K1)	6
3-c.	Illustrate Water fall Model. Explain the problems that are sometimes encountered when the waterfall model is applied? (CO2,K5)	6
3-d.	Differentiate between functional and structural testing. (CO2,K5)	6
3.e.	Define the Types of Reviews in software Testing. (CO3,K3)	6
3.f.	Explain Use case and error guessing testing in detail. (CO4,K4)	6
3.g.	Describe all the Phases of Defect Discovery. (CO5,K5)	6
<b>SECTION-C</b>		50
4. Answer any <u>one</u> of the following:-		
4-a.	Write Security Test case on Login page. (CO1,K1)	10
4-b.	Explain the following: (i) absence of error fallacy (ii) defects clusturing (iii) pesticide paradox (CO1,K1)	10
5. Answer any <u>one</u> of the following:-		
5-a.	Expalin Functional and Non-Functional Testing in detail. (CO2,K5)	10
5-b.	Define the following: (i) Unit Testing (ii) Integration Testing (iii) System testing (iv) Acceptance Testing (CO2,K5)	10
6. Answer any <u>one</u> of the following:-		
6-a.	What is the difference between testing in a production environment and testing in a testing environment? (CO3,K3)	10
6-b.	What is a test case management tool, and why is it important for managing test cases? (CO3,K3)	10
7. Answer any <u>one</u> of the following:-		
7-a.	Explain the following: (i) State Transition Testing(ii) boundary value analysis (iii) Use Case Testing (CO4,K4)	10
7-b.	Explain the following: (i) Equivalence Partitioning Testing(ii) boundary value analysis(iii) Decision Table Testing (CO4,K4)	10
8. Answer any <u>one</u> of the following:-		
8-a.	Define the following: (i)Test Manager(ii)Defect Prevention (iii)Phase Test Plan. (CO5,K5)	10
8-b.	Define the following: (i)Defect Discovery(ii)Project Metrics(iii)Test Approach. (CO5,K5)	10