Quiz-4
Software Quality Engineering - 5A

MCQs

Scenario 1:

Your company is developing a new e-commerce application. The product manager has provided a detailed feature list and a release date that is six months away. You, as the test lead, are responsible for creating the test plan.

1. **Question:**

   What key activities would you include in your test plan to ensure a structured approach to testing this application?

   - o A. Define the test scope, objectives, and resources.
   - o B. Randomly test features once developed.
   - o C. Skip testing non-critical features to save time.
   - o D. Plan to test only during the final sprint.

2. **Question:**

   The product manager informs you that there is a possibility of scope changes mid-project. How would you incorporate this risk into your test plan?

   - o A. Ignore the risk and proceed as planned.
   - o B. Include a buffer for scope changes in the test schedule and plan for regression testing.
   - o C. Refuse to accept scope changes during the testing phase.
   - o D. Plan only for smoke testing to adapt to changes.

3. **Question:**

   During the planning phase, the development team is considering implementing Test-Driven Development (TDD). As a test planner, how would you align your test strategy with this approach?

   - o A. Develop a detailed test script after the development is complete.
   - o B. Create test cases that can be automated and used as acceptance criteria for each feature.
   - o C. Avoid automation and stick to exploratory testing.
   - o D. Skip test planning since TDD inherently ensures quality.

Scenario 2:

You are working on a healthcare software system where high reliability and data security are critical. The customer has emphasized the need for compliance with ISO 25010 standards.

1. **Question:**

   Which of the following quality characteristics of ISO 25010 should you prioritize for this system?

   - o A. Functional suitability, security, and reliability.
   - o B. Portability and aesthetic design.
   - o C. Modularity and ease of deployment.
   - o D. Marketability and cost-efficiency.

2. **Question:**

   The system needs to provide consistent performance under varying loads. Which sub-characteristic of ISO 25010 is being addressed?

   - o A. Availability

- o B. Maintainability
- o C. Performance efficiency
- o D. Compatibility

3. **Question:**

The customer requires that the software integrates seamlessly with existing hospital management systems. Which ISO 25010 quality characteristic is most relevant here?
- o A. Usability
- o B. Compatibility
- o C. Functional suitability
- o D. Portability

Scenario 3:

Your team has been tasked with improving the defect density of a mobile banking application. You are analyzing metrics from the last two sprints.

1. **Question:**

The defect density in Sprint 1 was 7 defects per 1000 lines of code, while in Sprint 2 it dropped to 4 defects per 1000 lines of code. What does this indicate about the software quality trend?
- o A. The software quality is improving.
- o B. The software quality is deteriorating.
- o C. The metric is irrelevant for quality assessment.
- o D. It shows testing was skipped.

2. **Question:**

During a performance testing phase, the team notices a significant drop in response time under high load conditions. Which metric would best quantify this issue?
- o A. Defect leakage
- o B. Mean time to failure
- o C. Latency
- o D. Reliability growth

3. **Question:**

Your team reports that the defect removal efficiency (DRE) for the last release was 85%. What does this metric indicate?
- o A. 85% of defects in production were removed before release.
- o B. 85% of identified defects during testing were fixed before release.
- o C. 85% of customers found the application satisfactory.
- o D. 85% of the codebase was tested.

Short Answers

Scenario 1:

You are leading the test planning for a travel booking application. The development team is following an Agile methodology, and new features are expected to be delivered in two-week sprints. Stakeholders have emphasized the importance of end-to-end testing for critical workflows, such as flight and hotel bookings.

1. **Question:**

Describe how you would structure the test planning process in an Agile environment to ensure both iterative testing and end-to-end workflow coverage.

2. **Question:**

The client adds a requirement mid-sprint for integrating third-party payment gateways. How would you revise the test plan to accommodate this change while minimizing its impact on the sprint goal?

Scenario 1:

A gaming company is developing a multiplayer online game. The game must run seamlessly across multiple platforms, including PCs, consoles, and mobile devices, with minimal lag and high responsiveness.

1. **Question:**

   Identify at least three quality characteristics from ISO 25010 that are critical for this project, and explain how you would measure each characteristic during the development process.

2. **Question:**

   The game experiences performance issues when the player count exceeds a certain limit. Which sub-characteristic of ISO 25010 is being compromised, and what strategies would you implement to address this?

Scenario 3:

A mobile app development team measures quality using the defect removal efficiency (DRE) and defect leakage rate. For the last release, the DRE was 80%, and the defect leakage rate was 10%.

1. **Question:**

   What do these metrics indicate about the quality of the testing process, and what steps would you take to improve these metrics in future releases?

2. **Question:**

   Suggest additional quality control measurements that can complement DRE and defect leakage rate to provide a holistic view of the software's quality.