

## **Assignment**

### **Module – 2 (Manual Testing)**

**1. What is Exploratory Testing?**

Exploratory testing is an approach to software testing that is often described as simultaneous learning, test design, and execution.

**2. What is traceability matrix?**

Test conditions should be able to be linked back to their sources in the test basis, this is known as traceability matrix.

**3. What is Boundary value testing?**

Boundary value analysis is a methodology for designing test cases that concentrates software testing effort on cases near the limits of valid ranges.

**4. What is Equivalence partitioning testing?**

Equivalence partitioning testing is a software testing technique used to reduce the number of test cases needed to adequately test a software system while still maintaining test coverage.

**5. What is Integration testing?**

Integration testing is a level of software testing where individual units or components of a system are combined and tested as a group.

**6. What determines the level of risk?**

However, in the real software testing scenario, the risk level is determined by two dimensions: probability and impact.

**7. What is Alpha testing?**

Alpha testing is a type of software testing conducted internally by the organization developing the software, typically before it is released to external users or customers.

**8. What is beta testing?**

Beta testing is the process of testing a software product or service in a real-world environment before its official release. It is an essential step in the software development lifecycle as it helps identify bugs and errors that may have been missed during the development process.

**9. What is component testing?**

Component testing, also known as unit testing or module testing, is a level of software testing that focuses on verifying the individual components or units of a system.

**10. What is functional system testing?**

Functional testing is a type of testing that seeks to establish whether each application feature works as per the software requirements.

**11. What is non- functional testing?**

Non-functional testing is a type of software testing that verifies non-functional aspects of the product, such as performance, stability, and usability.

**12. What is GUI testing?**

Graphic user interface testing is the process of testing the system's GUI of the system under test. GUI testing involves checking the screens with the controls like menus, buttons, icons and all types of bar, tool-bar, menu-bar, dialog boxes and windows etc.

**13. What is Adhoc testing?**

Adhoc testing is an informal testing type with an aim to break the system. It does not follow any test design techniques to create test cases.

There are 3 types of Adhoc testing

- 1) Buddy testing
- 2) Pair testing
- 3) Monkey testing

**14. What is Load testing?**

Load testing is to test the system behavior under normal workload conditions and it is just testing or simulating with the actual workload.

**15. What is Stress testing?**

Stress testing is to test the system behavior under extreme conditions and is carried out till the system failure.

**16.What is white box testing and list the types of white box testing?**

White box testing, also known as glass box testing is a software testing technique where the internal structure, design, and implementation of the application under test are known to the tester.

**Types of white Box testing.**

- Statement Coverage
- Decision Coverage
- Condition Coverage

**17.What is black box testing? What are the different black box testing techniques?**

Black-box testing is testing either functional or non-functional, Without reference to the internal structure of the component or system. The tester has no knowledge of how the system or component is structured inside the box.

**Black Box testing techniques**

There are four Techniques of black box testing.

- 1) Equivalence Partitioning
- 2) Boundary value analysis
- 3) Decision tables
- 4) State transition testing

**18.Mention what are the categories of defects?**

- Functional Defects
- Performance Defects
- Compatibility Defects
- Usability Defects
- Security Defects
- Interface Defects
- Documentation Defects
- Installation/Configuration Defects
- Data Defects
- Concurrency Defects

**19.Mention what big bang testing is?**

Big Bang integration testing all components or module is integrated simultaneously, after which everything is tested as a whole. Here all component is integrated together at once, and then tested.

## **20. When should "Regression Testing" be performed?**

Regression testing should be performed whenever your codebase has been modified or altered in any way as well as to verify any previously discovered issues marked as fixed. It is performed when the software or its environment is changed.

## **21. What are 7 key principles? Explain in detail?**

- 1) Testing shows presence of Defects
- 2) Exhausting testing is impossible
- 3) Early testing
- 4) Defect clustering
- 5) The pesticide paradox
- 6) Testing is context dependent
- 7) Absence of error fallacy

## **22. Difference between QA v/s QC v/s Tester.**

### **Quality Assurance**

- Activities which ensure the implementation of processes, procedures and standards in context to verification of developed software and intended requirements.
- Focuses on processes and procedures rather than conducting actual testing on the system.
- Process oriented activities.
- Preventive activities.
- It is a subset of Software Test Life Cycle (STLC).

### **Quality Control**

- Activities which ensure the verification of developed software with respect to documented requirements.
- Focuses on actual testing by executing Software with intent to identify bug/defect through implementation of procedures and process.
- Product oriented activities.
- It is a corrective process.
- QC can be considered as the subset of Quality Assurance

### **Tester**

- Activities which ensure the identification of bugs/error/defects in the Software.

- Focuses on actual testing.
- Product oriented activities.
- It is a preventive process.
- Testing is the subset of Quality Control.

## **23. Difference between Smoke and Sanity?**

### **Smoke:**

- Smoke Testing is performed to ascertain that the critical functionalities of the program is working fine
- The objective of this testing is to verify "stability" of the system in order to the with more rigorous testing
- This testing is performed by the developers or testers.
- Smoke testing is usually documented or scripted
- Smoke testing is a subset of Regression testing.
- Smoke testing exercises the entire system from end to end.
- smoke testing is like general health checkup.

### **Sanity:**

- Sanity Testing is done to check the new functionality / bugs have been fixed.
- The objective of the testing is to verify the "rationality" of the system in order proceed to proceed with more rigorous testing.
- Sanity testing is usually performed by testers.
- Sanity testing is usually not documented and is unscripted
- Sanity testing is a subset of Acceptance testing
- Sanity testing exercises only the particular component of the entire system.
- Sanity testing is like specialized health checkup.

## **24. Difference between verification and Validation.**

### **Verification:**

- **Definition:** The process of evaluating work-products (not the actual final product) of a development phase to determine whether they meet the specified requirements for that phase.
- **Objective:** To ensure that the product is being built according to the requirements and design specifications. In other words, to ensure that work products meet their specified requirements.
- **Question:** Are we building the product right?

- **Evaluation Items:** Plans, Requirement Specs, Design Specs, Code, Test Cases.
- **Activities:** Reviews, Walkthroughs, Inspections

#### **Validation:**

- **Definition:** The process of evaluating software during or at the end of the development process to determine whether it satisfies specified business requirements.
- **Objective:** To ensure that the product actually meets the user's needs, and that the specifications were correct in the first place. In other words, to demonstrate that the product fulfils its intended use when placed in its intended environment.
- **Question:** Are we building the right product?
- **Evaluation Items:** The actual product/software.
- **Activities:** Testing

#### **25. Explain types of Performance testing.**

- Load testing
- Stress testing
- Endurance testing
- Spike testing
- Volume testing
- Scalability testing

#### **26. What is Error, Defect, Bug and failure?**

A mistake in coding is called Error, Error founded by tester is called Defect, Defect accepted by development team then it is called Bug, build doesn't meet the requirements then it is failure.

#### **27. Explain the difference between Functional testing and Non-functional testing.**

##### **Functional Testing:**

- Functional testing is a type of software testing in which the system is tested against the functional requirements and specifications.
- It verifies the operations and actions of an application.
- It is based on requirements of customer.
- It helps to enhance the behaviour of the application.
- Functional testing is easy to execute manually.

- It tests what the product does.
- Functional testing is based on the business requirement.
- EX: Unit testing, Smoke testing, Regression testing, Integration testing.

### **Non- Functional Testing:**

- Non- functional testing is a type of software testing that is performed to verify the non-functional requirements of the application.
- It verifies the behaviour of an application.
- It is based on expectations of customer.
- It helps to improve the performance of the application.
- It is hard to execute non-functional testing manually.
- It describes how the product does.
- Non-functional testing is based on the performance requirement.
- EX: Performance testing, Load testing, Stress testing, Scalability testing.

### **28. What is the difference between the STLC (Software Testing Life Cycle) and SDLC (Software Development Life Cycle)?**

#### **STLC:**

- STLC is mainly related to software testing.
- It focuses only on testing the software.
- In STLC, less number of members (testers) are needed.
- In STLC, testing team makes the plans and designs
- Goal of STLC is to complete successful testing of software.
- It helps in making the software defects free.
- STLC phases are performed after SDLC phases.
- Regression tests are run by QA team to check deployed maintenance code and maintains test cases and automated scripts.
- A tested software system is the end result of STLC.

#### **SDLC:**

- SDLC is mainly related to software development.
- Besides development other phases like testing is also included.
- In SDLC, more number of members (developers) are required for the whole process.
- In SDLC, development team makes the plans and designs based on the requirements.

- Goal of SDLC is to complete successful development of software.
- It helps in developing good quality software.
- SDLC phases are completed before the STLC phases.
- Post deployment support, enhancement, and update are to be included if necessary
- Creation of reusable software systems is the end result of SDLC.

**29. What is the difference between test scenarios, test cases, and test script?**

**Test Scenarios:**

- Test scenario contains high-level documentation which describes an end to end functionality to be tested.
- Test scenarios are often written in a narrative format and are used to ensure that testing covers all the important aspects of the software under test.

**Test Cases:**

- Test Case is a step by step procedure to test any functionality of the software application/product.
- Test cases are typically written in a structured format, such as a table or a checklist, and are used by testers to execute tests systematically.

**Test Script:**

- Test Script is set of instructions or a short program to test any functionality of software application/product
- Test scripts are used in automated testing to simulate user interactions with the software and verify its behaviour automatically.

**30.Explain what Test Plan is? What is the information that should be covered?**

Test Planning in STLC is a phase in which a Senior QA manager determines the test plan strategy along with efforts and cost estimates for the project.

Moreover, the resources, test environment, test limitations and the testing schedule are also determined.

Activities in Requirement Phase Testing:

- Preparation of test plan, strategy document for various types of testing



- Test tool selection
- Test effort estimation
- Resource planning and deterring roles and responsibilities.
- Training requirement

#### Deliverable of Requirement Phase Testing

- Test plan/strategy document.
- Effort estimation document.

### 31.What is the procedure for GUI Testing?

Graphical User Interface (GUI) testing is the process of testing the system's GUI of the System under Test. GUI testing involves checking the screens with the controls like menus, buttons, icons, and all types of bars – tool bar, menu bar, dialog boxes and windows etc.

- **Manual Based Testing:** Under this approach, graphical screens are checked manually by testers in conformance with the requirements stated in business requirements documents.
- **Record and Replay:** In GUI testing can be done using automation tools. This is done in 2 parts during record. Test steps are captured into the automation tool. During playback, the recorded test steps are executed on the application under test.

### 32.What are the different Methodologies in Agile Development Model?

The Agile methodology is a way to manage a project by breaking it up into several phases. It involves constant collaboration with stakeholders and continuous improvement at every stage. Once the work begins, teams cycle through a process of planning, executing, and evaluating.

- Agile is a philosophy, i.e., a set of values and principles to make a decision for developing software.
- Agile is based on the iterative-incremental model. In an incremental model, we create the system in increments, where each increment is developed and tested individually.

### 33.When to used Usability Testing?

Usability testing is typically used during the design and development process of product or service to evaluate how easy and intuitive it is for users to interact with its beneficial to conduct usability testing.

1. During initial design phases: To gather feedback on early prototypes or wireframes before investing significant resources in to development.
2. During development:- to identify and address usability issues as they arise ensuring a smoother user experience.
3. Before launch: to ensure that the final product meets user needs and expectations, reducing the risk of negative user experiences and costly redesigns post - launch.
4. For comparative analysis: - to compare the usability of different versions or designs to inform decision making.

### **34.What is the purpose of exit criteria?**

Exit criteria ensure that the software being tested meets the quality standards set by the project stakeholders. This includes requirements such as functionality, performance, reliability, usability, security, and other quality attributes.

- Exit criteria provide a basis for decision-making regarding whether to proceed to the next phase of testing, release the software, or continue testing. Meeting the exit criteria indicates that the software has undergone sufficient testing and is ready for the next steps in the development lifecycle.
- Exit criteria help optimize resource allocation by defining when testing activities can be concluded. This ensures that testing efforts are focused on areas of the software that require additional attention and that resources are not wasted on unnecessary testing.