**Software Testing Assignment**

**Module – 2 [ Manual Testing ]**

**1) What is Exploratory testing?**

* **Exploratory Testing** is a type of software testing where Test cases are not created in advance but testers check system on the fly. They may note down ideas about what to test before test execution. The focus of exploratory testing is more on testing as a “thinking” activity.

**2) What is traceability matrix?**

* Traceability matrix is a table type document that is used in the development of software application to trace requirements. It can be used for both forward (from Requirements to Design or Coding) and backward (from Coding to Requirements) tracing. It is also known as Requirement Traceability Matrix

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

* Boundary value testing is the process of testing between extreme ends or boundaries between partitions of the input values.
* So these extreme ends like Start- End, Lower- Upper, Maximum-Minimum, Just Inside-Just Outside values are called boundary values and the testing is called “boundary value testing”.

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

* Equivalence Class Partitioning is type of black box testing technique which can be applied to all levels of [software testing](https://www.guru99.com/software-testing.html) like unit, integration, system, etc. In this technique, input data units are divided into equivalent partitions that can be used to derive test cases which reduces time required for testing because of small number of test cases.

**5) What is Integration testing?**

* Integration Testing is defined as a type of testing where software modules are integrated logically and tested as a group. The purpose of this level of testing is to expose defects in the interaction between these software modules when they are integrated

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

* Risks are of two types
* Project Risks
* Product Risk

**7) What is Alpha testing?**

* **Alpha Testing** is a type of software testing performed to identify bugs before releasing the software product to the real users or public. It is a type of [acceptance testing.](https://www.guru99.com/user-acceptance-testing.html) The main objective of alpha testing is to refine the software product by finding and fixing the bugs that were not discovered through previous tests.

**8) What is beta testing?**

* **Beta Testing** is performed by “real users” of the software application in “real environment” and it can be considered as a form of external [User Acceptance Testing](https://www.guru99.com/user-acceptance-testing.html). It is the final test before shipping a product to the customers. Direct feedback from customers is a major advantage of Beta Testing. This testing helps to test products in customer’s environment.

**9) What is component testing?**

* Component Testing – The testing of individual software components.

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

* Functional System Testing : A requirement that specifies a function that a system or system component must perform

**11) What is Non-Functional Testing?**

* Non-functional testing is a type of software testing to test non-functional parameters such as reliability, load test, performance and accountability of the software.

**12) What is GUI Testing?**

* GUI Testing is a software testing type that checks the Graphical User Interface of the Software. The purpose of Graphical User Interface (GUI) Testing is to ensure the functionalities of software application work as per specifications by checking screens and controls like menus, buttons, icons, etc.

**13) What is Adhoc testing?**

* Ad hoc testing is done randomly and it is usually an unplanned activity which does not follow any documentation and test design techniques to create test cases.

**14) What is load testing?**

* **Load Testing** is a non-functional software testing process in which the performance of software application is tested under a specific expected load. It determines how the software application behaves while being accessed by multiple users simultaneously.

**15) What is stress Testing?**

* **Stress Testing** is a type of software testing that verifies stability & reliability of software application. The goal of Stress testing is measuring software on its robustness and error handling capabilities under extremely heavy load conditions and ensuring that software doesn’t crash under crunch situations.

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

* White Box Testing: Testing based on an analysis of the internal structure of the component or system.
* Structure-based testing technique is also known as ‘white-box’
* Type 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: Testing, either functional or non-functional without reference to the internal structure of the component or system.
* The testers have no knowledge of how the system or component is structured inside the box.
* Equivalence partitioning
* Boundary value analysis
* Decision tables
* State transition testing
* Use-case Testing

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

* Arithmetic Defects.
* Logical Defects.
* Syntax Defects.
* Multithreading Defects.
* Interface Defects.
* Performance Defects.

**19) Mention what bigbang testing is?**

* In Big Bang integration testing all components or modules is integrated simultaneously after which everything is tested as a whole.

**20) What is the purpose of exit criteria?**

* Run out of time?
* Run out of budget?
* The business tells you it went live last night!
* Boss says stop?
* All defects have been fixed?
* When out exit criteria have been met?

**21) When should "Regression Testing" be performed?**

* When new functionality added to the application.
* When there is a Change Requirement.
* When the defect fixed
* When there is a performance issue fix
* When there is an environment change

**22) What is 7 key principles? Explain in detail?**

1. Testing shows presence of defect

* Testing can show that defect are present, but cannot prove that there are no defect

1. Exhaustive testing is impossible

* Testing everything including all combinations of inputs and preconditions is not possible.

1. Early testing

* Testing activities

1. Defect clustering

* Defect Clustering which states that a small number of modules contain most of the defects detected.

1. The pesticide paradox

* To overcome this, the test cases need to be regularly reviewed & revised, adding new & different test cases to help find more defects.

1. Testing is context dependent

* Different kinds of sites are tested differently.

1. Absence of errors fallacy

* Finding and fixing defects does not help if the system build is unusable and does not fulfill the user’s needs & requirements.

**23) Difference between QA v/s QC v/s Tester**

| **QA** | **QC** | **Tester** |
| --- | --- | --- |
| Activities which ensure the implementation of processes | Activities which ensure the verification of developed software with respect to documented | Activities which ensure the identification of bugs/error/defects in the Software. |
| Focuses on processes and procedures rather than conducting actual testing on the system. | Focuses on actual testing by executing Software with intend to identify bug/defect through implementation of procedures and process. | Focuses on actual testing |
| Process oriented activities. | Product oriented activities | Product oriented activities. |
| Preventive activities | It is a corrective process | It is a preventive process. |
| It is a subset of Software Test Life Cycle (STLC). | QC can be considered as the subset of Quality Assurance. | Testing is the subset of Quality Control. |

**24) Difference between Smoke and Sanity?**

| **Smoke** | **Sanity** |
| --- | --- |
| Smoke Testing is performed to ascertain that the critical functionalities of the program is working fine | Sanity Testing is done to check the new functionality/bugs have been fixed |
| This testing is performed by the developers or testers | Sanity testing in software testing is usually performed by testers |
| Smoke testing is usually documented or scripted | Sanity testing is usually not documented and is unscripted |
| Smoke testing is a subset of Acceptance testing | Sanity testing is a subset of [Regression Testing](https://www.guru99.com/regression-testing.html) |
| Smoke testing is like General Health Check Up | Sanity Testing is like specialized health check up |

**25) Difference between verification and Validation**

| **Verification** | **Validation** |
| --- | --- |
| The verifying process includes checking documents, design, code, and program | It is a dynamic mechanism of testing and validating the actual product |
| It does *not* involve executing the code | It always involves executing the code |
| Verification uses methods like reviews, walkthroughs, inspections, and desk- checking etc. | It uses methods like Black Box Testing, [White Box Testing](https://www.guru99.com/white-box-testing.html), and non-functional testing |
| Whether the software conforms to specification is checked | It checks whether the software meets the requirements and expectations of a customer |
| It finds bugs early in the development cycle | It can find bugs that the verification process can not catch |
| It comes before validation | It comes after verification |

**26) Explain types of Performance testing?**

* **Load Testing**
* Load testing is a type of testing which involves evaluating the performance of the system under the expected workload.
* **Stress Testing**
* Stress testing is a type of performance testing where we evaluate the application’s performance at load much higher than the expected load.
* **Endurance Testing**
* Endurance testing is also known as ‘soak testing’. it is done to determine if the system can sustain the continuous expected load for a long duration.
* **Spike Testing**
* in spike testing, we analyze the behavior of the system on suddenly increasing the number of user.
* **Volume Testing**
* The volume testing is performed by feeding the application with a high volume of data.

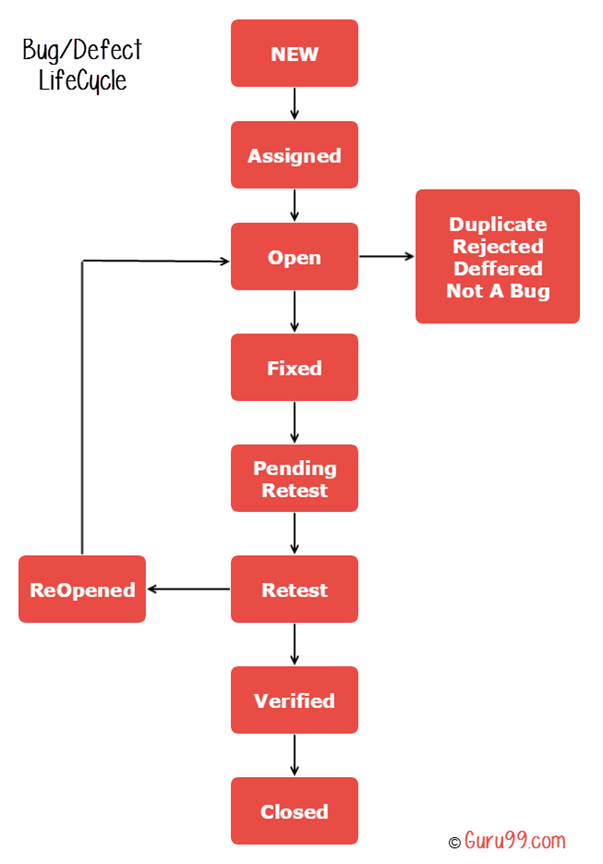
**27) What is Error, Defect, Bug and failure?**

* A mistake in coding is called error.
* Error found by tester is called defect.
* Defect accepted by development then it is called but.
* Buil does not meet the requirements then it is failure.

**28) Difference between Priority and Severity**

| **Severity** | **Priority** |
| --- | --- |
| Severity is a parameter to denote the impact of a particular defect on the software. | Priority is a parameter to decide the order in which defects should be fixed. |
| Severity means how severe defect is affecting the functionality. | Priority means how fast defect has to be fixed. |
| Severity is related to the quality standard. | Priority is related to scheduling to resolve the problem. |
| Testing engineer decides the severity level of the defect. | Product manager decides the priorities of defects. |
| Its value is objective. | Its value is subjective. |
| Severity is of 5 types: Critical, Major, Moderate, Minor, and Cosmetic. | Priority is of 3 types: Low, Medium, and High. |

**29) What is Bug Life Cycle?**

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**30) Explain the difference between Functional testing and Non Functional testing**

| **Parameter** | **Functional testing** | **Non-functional testing** |
| --- | --- | --- |
| **Execution** | It is performed before non-functional testing. | It is performed after the functional testing. |
| **Focus area** | It is based on customer’s requirements. | It focusses on customer’s expectation. |
| **Requirement** | It is easy to define functional requirements. | It is difficult to define the requirements for non-functional testing. |
| **Usage** | Helps to validate the behavior of the application. | Helps to validate the performance of the application. |
| **Objective** | Carried out to validate software actions. | It is done to validate the performance of the software. |
| **Manual testing** | Functional testing is easy to execute by manual testing. | It’s very hard to perform non-functional testing manually. |
| **Functionality** | It describes what the product does. | It describes how the product works. |
| **Example Test Case** | Check login functionality. | The dashboard should load in 2 seconds. |
| **Testing Types** | Unit testing  Smoke testing  User Acceptance  Integration Testing  Regression testing | Performance Testing  Volume Testing  Scalability  Usability Testing  Load Testing  Stress Testing |

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

| **Parameter** | **SDLC** | **STLC** |
| --- | --- | --- |
| Origin | Development Life Cycle | Testing Life Cycle |
| Objective | The main object of SDLC life cycle is to complete successful development of the software including testing and other phases. | The only objective of the STLC phase is testing. |
| Requirement Gathering | In SDLC the business analyst  gathers the requirements and  create Development Plan | In STLC, the QA team analyze requirement documents like functional and non-functional documents and create System Test Plan |
| High & Low-Level Design | In SDLC, the development team creates the high and low-level design plans | In STLC, the test analyst creates the Integration Test Plan |
| Coding | The real code is developed,  and actual work takes place as per the design documents. | The testing team prepares the test environment and executes them |
| Maintenance | SDLC phase also includes post-deployment supports and updates. | Testers, execute regression suits, usually automation scripts to check maintenance code deployed. |

**32) What is the difference between test scenarios, test cases, and test script?**

* **Test Scenarios**: A Test Scenario is any functionality that can be tested. It is also called Test Condition or Test Possibility.
* **Test Cases**: It is a document that contains the steps that has to be executed, it has been planned earlier.
* **Test Script:** It is written in a programming language and it's a short program used to test part of functionality of the software system. In other words a written set of steps that should be performed manually.

**33) Explain what Test Plan is? What is the information that should be covered?**

* Moreover, the resources, test environment, test limitations and the testing schedule are also determined.
* The Test Plan gets prepared and finalized in the same phase.
* 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 determining roles and responsibilities.
* Training requirement

**34) What is priority?**

* Priority is defined as the order in which a defect should be fixed. Higher the priority the sooner the defect should be resolved.
* Defects that leave the software system unusable are given higher priority over defects that cause a small functionality of the software to fail.

**35) What is severity?**

* Defect Severity in testing is a degree of impact a bug or a [Defect](https://www.guru99.com/defect-management-process.html) has on the software application under test. A higher effect of bug/defect on system functionality will lead to a higher severity level. A [Quality Assurance](https://www.guru99.com/all-about-quality-assurance.html) engineer usually determines the severity level of a bug/defect.

**36) Bug categories are…**

#### Functional Bugs

#### Logical Bugs

#### Workflow Bugs

#### Unit Level Bugs

#### System-Level Integration Bugs

#### Out of Bound Bugs

#### Security Bugs

**37) Advantage of Bugzila .**

* Advanced search capabilities
* E-mail Notifications
* Modify/file Bugs by e-mail
* Time tracking
* Strong security
* Customization
* Localization

**38) Difference between priority and severity**

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**39) What are the different Methodologies in Agile Development Model?**

* There are 5 main Agile methodologies: Scrum, Kanban, Extreme Programming (XP), Lean Development e Crystal.

**40) Explain the difference between Authorization and Authentication in Web testing. What are the common problems faced in Web testing?**

| **Authorization** | **Authentication** |
| --- | --- |
| Authentication is the process of identifying a user to provide access to a system. | Authorization is the process of giving permission to access the resources. |
| In this, the user or client and server are verified. | In this, it is verified that if the user is allowed through the defined policies and rules. |
| It is usually performed before the authorization. | It is usually done once the user is successfully authenticated. |
| It requires the login details of the user, such as user name & password, etc. | It requires the user's privilege or security level. |
| Data is provided through the Token Ids. | Data is provided through the access tokens. |
| **Example:** Entering Login details is necessary for the employees to authenticate themselves to access the organizational emails or software. | **Example:** After employees successfully authenticate themselves, they can access and work on certain functions only as per their roles and profiles. |

**41) Write a scenario of only Whatsapp chat messages**

* Verify that the user can send messages to any individual selected from his contact list
* Verify that clicking a chat in the chat list opens a new window containing all the chats received and sent with the other person.
* Verify that the user can share or receive contact with the other person.
* Verify that the user can create a group by adding multiple people from his contact list.
* Verify that the user can send and receive the message in group chats.

**42) Write a Scenario of Pen**

* Verify that the length and the diameter of the pen are as per the specifications.
* Verify that the brand name and/or logo of the company creating the pen should be clearly visible.
* Verify the type of pen, whether it is a ballpoint pen, ink pen, or gel pen.
* verify that the user is able to write clearly over different types of papers
* Verify if the pen is with a cap or without a cap.
* Verify the color of the ink on the pen.
* Verify if the text written by the pen is erasable or not.
* Check if the text written by the pen is waterproof or not.
* Verify if the pen can support multiple refills or not.
* Verify the functioning of a pen at extreme temperatures – much higher and lower than room temperature.
* Verify the functioning of a pen at extreme altitude.
* Verify the functioning of the pen by applying extreme pressure.
* Check how fast the user can write with the pen over supported surfaces.

**43) Write a Scenario of Pen Stand**

* verify the pen stand material
* verify pen stand color
* verify the pen stand is not breakable to normal condition
* verify how many pen in the pen stand drop
* verify maximum capacity of pen stand
* verify another uses of pen stand
* verify pen stand quality
* verify pen stand is waterproof

**44) Write a Scenario of Door**

* Verify if the door is single door or bi-folded door
* Check if the door opens inwards or outwards
* Verify that the dimension of the doors are as per the specifications
* Verify that the material used in the door body and its parts is as per the specifications
* Verify that color of the door is as specified
* Verify if the door is sliding door or rotating door
* Verify if the door is sliding door or rotating door
* Check the type of locks in the door
* Verify if the door is having stopper or not
* Verify if the door closes automatically or not – spring mechanism
* Verify if the door makes noise when opened or closed

**45) Write a Scenario of ATM**

* Verify that all the labels and controls including text boxes, buttons, images, and links are present on the screen.
* Check the informative text written displayed on the screen is clearly visible
* Verify that the size, color, and UI of the different objects are as per the specifications.
* Verify the type of ATM machine, if it has a touch screen, both keypad buttons only,
* Verify that the touch of the ATM screen is smooth and operational.
* Verify that on properly inserting a valid card different banking options appear on the screen.
* Verify that the user is presented with the option to choose a language for further operations.
* Check that the pin is displayed in masked form when entered.
* Verify that the user is presented with different account type options like- saving, current, etc.
* Verify that the user is provided the option to get the transaction details in printed form.
* Verify that the user’s session timeout is maintained.
* Verify that the user is not allowed to exceed the one-day transaction limit amount.
* Check that the user is not allowed to proceed with the expired ATM card and that a proper error message gets displayed.

**46) When to used Usability Testing?**

* Usability Testing identifies usability errors in the system early in development cycle and can save a product from failure

**47) 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

**48) Write a scenario of Microwave Owen**

* Verify that the dimensions of the oven are as per the specification provided
* Verify that the oven’s material is optimal for its use as an oven and as per the specification.
* Verify that the oven heats the food at the desired temperature properly.
* Verify that oven heats food at the desired temperature within a specified time duration.
* Verify the ovens functioning with maximum attainable temperature
* Verify the ovens functioning with minimum attainable temperature.
* Verify that the oven’s door gets closed properly.
* Verify that the oven’s door opens smoothly.
* Verify that the text written over the oven’s body is clearly readable.
* Verify that the digital display is clearly visible and functions correctly.
* Verify that the temperature regulator is smooth to operate.
* Verify that the temperature regulator works correctly.
* Check oven’s functionality with different kinds of food – solid, liquid.

**49) Write a scenario of Coffee vending Machine**

* Verify that the dimension of the coffee machine is as per the specification
* Verify that outer body, as well as inner part’s material, is as per the specification
* Verify that the machine’s body color as well brand is correctly visible and as per specification
* Verify the input mechanism for coffee ingredients-milk, water, coffee beans/powder, etc
* Verify that the quantity of hot water, milk, coffee powder per serving is correct
* Verify the power/voltage requirements of the machine
* Verify that coffee should not leak when not in operation
* Verify that the digital display displays correct information
* Check if the machine can be switched on and off using the power buttons
* Check the amount of time the machine takes to serve a single serving
* of coffee
* Check the functioning of the coffee machine when two/multiple buttons are pressed simultaneously
* Check the functioning of coffee machine with a lesser or higher voltage than required

**50) Write a scenario of chair**

* Verify that the chair is stable enough to take an average human load
* Check the material used in making the chair-wood, plastic etc
* Check if the chair’s leg are level to the floor
* Check the usability of the chair as an office chair, normal household chair
* Check if there is back support in the chair
* Check if there is support for hands in the chair
* Verify the paint’s type and color
* Check if cushion is provided with chair or not
* Check the condition when washed with water or effect of water on chair
* Verify that the weight of the chair is as per the specifications
* Check the height of the chair’s seat from floor
* Check the battery requirement of the watch.

**51) Write a Scenario of Wrist Watch**

* Verify the type of watch – analog or digital.
* In the case of an analog watch, check the correctness time displayed by the second, minute, and hour hand of the watch.
* In the case of a digital watch, check the digital display for hours, minutes, and seconds is correctly displayed.
* Verify the material of the watch and its strap.
* Check if the shape of the dial is as per specification.
* Verify the dimension of the watch is as per the specification.
* Verify the weight of the watch.
* Check if the watch is waterproof or not.
* Verify that the numbers in the dial are clearly visible or not.
* Check if the watch is having a date and day display or not.
* Verify the color of the text displayed in the watch – time, day, date, and other information.
* Verify if the brand of the watch and check if its visible in the dial.
* Check if the clock is having stopwatch, timers, and alarm functionality or not.
* In the case of a digital watch, verify the format of the watch 12 hours or 24 hours

**52) Write a Scenario of Lift(Elevator)**

* Verify the dimensions of the lift
* Verify the type of door of the lift is as per the specification
* Verify the type of metal used in the lift interior and exterior
* Verify the capacity of the lift in terms of the total weight
* Verify the buttons in the lift to close and open the door and numbers as per the number of floors
* Verify the buttons in the lift to close and open the door and numbers as per the number of floors
* Verify that lift moves to the particular floor as the button of the floor is clicked
* Verify that lift stops when up/down buttons at particular floor are pressed
* Verify if there is an emergency button to contact officials in case of any mishap
* Verify the performance of the floor – the time is taken to go to a floor

**53)To Create Scenario (Positive & Negative) Online shopping to buy product (flipkart).**

Ans.:- Positive:-

1. User navigation through all the pages of the application

2. None of the links in the applications should be broken.

3. Company logo, products, prices, and their description should be visible.

4. Products should be listed category-wise on the application.

5. Products should be displayed which match the search criteria.

Negative:-

1. Verify product price is correct along with shipping charges, VAT. VAT and shipping charges should be correctly applied.

2. Confirm VAT varies based on the number of products in the cart.

3. Verify all the payment methods are correctly working such as net banking, credit/debit card, and PayPal using dummy numbers for testing.

4. Ensure payment is refunded to the customer when a product is cancelled based on payment id.

5. Make sure the emails and invoices sent to the customer after a product is purchased by the user.

**54)Write a Scenario of whatsapp Group (generate group).**

1. Check how many users can log into the group chat.

2. Check how many users are active.

3. Check how many users can be limited to the channel or groups.

4. Check the limit of the users that can be active on all the channels or groups.

5. Check all the members can view the message.

6. Check if all the messages are accessible by the moderator or admin.

7. Check if a normal user can send a text message to a specific user.

8. Check if the users are restricted from creating their groups.

9. Check if the channel can connect with the available integration apps.

10.Check if the user can open multiple channel windows.

11.Check if the user gets the avatar from the gravatar.

**56)Write a Scenario of instagram ( video call with chat ).**

**1**.Verify the Camera should be available on the Mobile phone.

2.Verify the Camera driver should be available and installed.

3.Verify the Camera Icon should be available on the Mobile phone menu.

4.Verify the availability of Led Flash in the Camera.

5.Verify the availability of a Single Led Flash in the Camera.

6.Verify the availability of a Dual Led Flash in the Camera.

7.Verify the availability of Dual Cameras on Mobile phones.

8.Verify the availability of a Torchlight Camera on a Mobile phone.

9. Verify the availability Panorama feature in the Camera.

**57)Write a Scenario of Whatsapp payment.**

1. Check if all the labels and boxes are visible.

2. Verify the payment gateway company logo or name.

3. Check if the credit card number is masked or not.

4. Verify that all the payment options are visible.

5. Check if the color scheme matches the specifications.

6. Check if the user gets a confirmation message or mail if the payment is successful.

7. Check if a pop-up appears if the session has expired.

8. Verify that the user gets information about unsuccessful payment.

9. Check if double payment is not occurring in any case.

10.Check what happens after the session gets expired. Does the payment still occur?

11.Verify if the respective payment option triggers the right payment gateway.