**Module -2 (Manual Testing)**

**Q-1 What is exploratory testing?**

Exploratory testing is a type of software testing in which the testers is free to select any possible methodology to test the software. It is an unscripted approach to software testing, software developers use their personal learning, knowledge, skills, and abilities to test the software developed by themselves.

**Q-2 What is traceability matrix?**

A traceability matrix is a document that co-relates any two-baseline documents that require a many-to-many relationship to check the completeness of the relationship.

**Q-3 What Is boundary value testing?**

Boundary testing is the process of testing between extreme ends or boundaries between partitions of the input values.

**Q-4 What is Equivalence partitioning testing?**

Equivalence partitioning method is also known as equivalence class partitioning. It is a software testing technique or black-box testing that divides input domain into classes of data, and with the help of these classes of data, test cases can be derived.

**Q-5 What is integration testing?**

Integration testing is the process of testing the interface between two software unites or modules. It focuses on determining the correctness of the interface.

**Q-6 What determines the level of risk?**

There are two types of risks

1. Project risk 2. Product risk

**Q-7 What is Alpha testing?**

Alpha Testing is a type of software testing performed to identify bugs before releasing the product to real users to the public.

Alpha testing is one of the user acceptance testing.

**Q-8 What is Beta Testing?**

Beta testing is the process of testing a softwareproduct or service in a real-world environment before its official release. It helps identify bugs and errors that may have been missed during the development process.

**Q-9 What is component testing?**

Component testing is defined as a software testing type, in which the testing is performed on each individual component separately without integrating with other components.

**Q-10 What is functional system testing?**

Functional system testing is a type of testingthat validates the software system against the functional .the purpose of functional tests is to test each function of the software application, by providing appropriate input, varying the output against the functional requirements.

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

Non-Functional testing is defined as a type of software testing to check non-functional aspects (performance, usability, reliability) of a software application. It is designed to test the readiness of a system as per nonfunctional parameters which are never addressed by functional testing.

**Q-12 What is GUI testing?**

GUI testing is the process for ensuring proper functionality of the graphical user interface for a specific application. GUI testing is generally evaluates a design of elements such as layout, colors and also fonts, font sizes, labels, text boxes, text formatting, captions, buttons, lists, icons, links, and content.

**Q-13 What is Adhoc testing?**Adhoc testing is type of testing which is performed informally and randomly after the formal testing is completed to find out any loophole in the system. For this reason it is also known as random testing or monkey testing.

**Q-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.

**Q-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 does not crash under crunch situations.

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

White box testing techniques analyze the internal design, code structure, and the working of the software rather than just functionality as in black box testing. It is also called glass box testing or clear box testing or structural testing.

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

Black box testing is a type of software testing in which the tester is not concerned with the internal knowledge or implementation details of the software, but rather focuses on validating the functionality based on the provided specifications or requirements.

Black box testing techniques –

Equivalence partitioning

Boundary value analysis

Decision table testing

State transition testing

Error guessing

**Q-18 Mention what are the categories of defects?**

1. Arithmetic defects
2. Logical defects
3. Syntax defects
4. Multithreading defects
5. Interface defects
6. Performance defects
7. Software error
8. Software fault
9. Software failure

**Q-19 Mention what big bang testing is?**

Big Bang integration testing is an integration testing strategy wherein all units are linked at once, resulting in a complete system. When this type of testing strategy is adopted, it is difficult to isolate any errors found, because attention is not paid to verifying the interface across individual units.

**Q-20 What is the purpose of Exit criteria?**

The criteria or requirements which must be met to complete a specific task or process as used in some fields of business.

**Q-21 When should “Regression Testing” be performed?**

A type of testing in the software development cycle that runs after every change to ensure that the change introduces no unintended breaks.

**Q-22 What is 7 Key principles? Explain in detail**

Here are the 7 principles

1. **Exhaustive testing is not possible**

Yes, because it is not possible to cover all the test scenarios but still testers try to cover as many possible scenarios for software

1. **Defect Clustering**

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

If the same tests are repeated over and over again, eventually the same test cases will no longer find new bugs.

1. **Pesticide Paradox**

If the same set of repetitive testes are conducted, the method will be useless for discovering new defects.

1. **Testing shows presence of defects**

Software testing reduces the probability of undiscovered defects remaining in the software but even if no defects are found, it is not a proof of correctness.

1. **Absence of Error fallacy**

It is possible that software which is 99% bug-free is still unusable. This can be the case if the system is tested thoroughly for the wrong requirement.

1. **Early Testing**

Testing should start as early as possible in the software development life cycle. So that any defects in the requirements or design phase are captured in early stages of testing.

1. **Testing is context dependent**

Testing is context dependent which basically means that the way you test an e-commerce site will be different from the way you test a commercial off the shelf application. All the developed software’s are not identical.

**Q-23 Difference between QA v/s QC v/s Tester**

|  |  |  |
| --- | --- | --- |
| **QUALITY ASSURANCE** | **QUALITY CONTROL** | **TESTER** |
| Activities which ensure the implementation of processes, procedures and standards in context to verification of developed software and intended requirements. | Activities which ensure the verification of developed software with respect to documented requirement | Activities which ensure the identification of bugs/errors/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/defects 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. |

**Q-24 Difference between Smoke and Sanity?**

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| **SMOKE TESTING** | **SANITY TESTING** |
| 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. |
| The objective of this testing is to verify stability of the system in order to with more rigorous testing | The objective of the testing is to verify the rationality of the system in order proceed with more rigorous testing |
| This testing is performed by the developers or tester | Sanity testing is usually performed by testers |
| Smoke testing is usually documented or scripted | Sanity testing is usually not documented and scripted |
| Smoke testing is like general health check | Sanity testing is like specialized health check up |

**Q-25 Difference between verification and validation**

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| **VERIFICATION** | **VALIDATION** |
| The verifying processes 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, and non- functional testing |
| Whether the software conforms to specification is checked | It checks whether the software meets the requirements and expectations of customer |
| It finds bugs early in the development cycle | It can find bugs that the verification process cannot catch |

**Q-26 Explain types of performance testing**

1. **Load testing** – Checks the application’s ability to perform under anticipated user loads.
2. **Stress testing –** Involves testing an application under extreme workloads to see how it handles high traffic or data processing.
3. **Endurance testing –** Is done to make sure the software can handle the expected load over a long period of time
4. **Spike testing –** Tests the software’s reaction to sudden large spikes in the load generated by users.
5. **Volume testing –** Under volume testing large no. of data is populated in a database, and the overall software system’s behavior is mentioned.
6. **Scalability testing –** The objective of scalability testing is to determine the software application’s effectiveness in “scaling up” to support an increase in user load.

**Q-27 What is Error, Defect, Bug and failure?**

1. **Error –** A mistake made by a programmer during coding is called an error.
2. **Defect –** An error found during the testing in the development phase is called a defect.
3. **Bug –** Defect accepted by development team then it is called bug.
4. **Failure –** Build does not meet the requirements then it is failure.

**Q-28 Difference between priority and severity?**

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| **SEVETORI** | **PRIORITY** |
| Severity is a term that denotes how severely a defect can affect the functionality of the software. | Priority is a term that defines how fast we need to fix a defect. |
| Severity is basically a parameter that denotes the total impact of a given defect on any software. | Priority is basically a parameter that decides the order in which we should fix the defects. |
| Severity relates to the standards of quality | Priority relates to the scheduling of defects to resolve them in software |
| The value of severity changes continually from time to time | The value of priority changes from time to time |
| The testing engineer basically decides a defect’s severity level. | The product manager decides a defect’s priority level. |

**Q-29 What is Bug Cycle?**

Bug cycle in software testing is the specific set of states that defects or goes through in its entire life. The purpose of defect life cycle is to easily coordinate and communicate current status of defects which changes to various assignees and make the defect fixing process systematic and efficient.

**Q-30 Explain the difference between functional testing and non-functional testing?**

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| **FUNCTIONAL TESTING** | **NON-FUNCTIONAL TESTING** |
| It is performed before non- functional testing | It is performed after functional testing |
| It is based on customer’s requirements | It focuses on customer’s expectations |
| It is easy to define customer’s requirement | It is difficult to define the requirement for non-functional testing |
| Helps to validate software actions | Helps to validate the performance of the application |
| It describes what the product does | It describes how the product works |

**Q-31 What is the difference between STLC and SDLC?**

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| **SDLC** | **STLC** |
| Development life cycle | Testing life cycle |
| The main object of SDLC life cycle is to complete successful development of the software including testing and other phases. | In STLC, the QA team analyze requirement documents like functional and non-functional documents and create system test plan |
| The development team creates the high and low-level design plan | The test analyst creates the integration test plan |
| 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 |
| SDLC phase also includes post-development support and updates | Tester, execute regression suits, usually automation scripts to check maintenance code developed |

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

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| **TEST SCENARIO** | **TEST CASES** | **TEST SCRIPT** |
| Is any functionality that can be tested | Is a set of actions executed to verify particular features or functionality | Is a set of instructions to test an app automatically |
| Is derived from test artifacts lie business requirement specification and software requirement specification | Is mostly derived from test scenarios | Is mostly derived from test cases |
| Helps test the end-to-end functionality in an agile way | Helps in exhaustive testing of an app | Helps to test specific thing repeatedly |
| Is more focused on what to test | Is focused on what to test and how to test | Is focused on the expected results |
| Takes less time and fewer resources to create | Requires more resources and time | Requires less time for testing but more resources for scripts creating and updating |

**Q-33 Explain what Test plan is? What is the information that should be covered**

A test plan is detailed document that describes the test strategy, objectives, schedule, estimation, deliverables, and resources required to perform testing for a software product. Test plan helps us determine the effort needed to validate the quality of the application under test.

**Q-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.

**Q-35 What is severity?**

Severity is defined as the extent to which a particular defect can create an impact on the software. Severity is a parameter to denote the implication and the impact of the defect on the functionality of the software.

**Q-36 Bug categories are…**

1. Functional bug
2. Performance bugs
3. Security bugs
4. Unit-level bugs
5. Usability bugs
6. Syntax errors
7. Compatibility errors
8. Logic bugs

**Q-37 Advantages of Bugzilla.**

\*It is an open-source widely used bug tracker

\*It is easy in usage and its user interface is understandable for people without technical knowledge

\*It easily integrates with test management instruments

**Q-38 What are the different methodology in Agile Development Model?**

1. Scrum
2. Kanban
3. Scrumban
4. Extreme programing
5. Lean software development
6. Crystal
7. Dynamic systems development method
8. Feature driven development
9. Adaptive software development

**Q-39 Explain the difference between authorization and authentication in web testing. What are the common problems faced in web testing?**

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| **AUTHORIZATION** | **AUNTHENTICATION** |
| In the authorization process, person’s authorities are checked for accessing the resources. | In the authentication process, the identity of users are checked for providing the access to the system. |
| while in this process, users are validated | in the authentication process, users are verified |
| Done after authentication process | Done before authorization process |
| It needs the user’s privilege or security levels | It needs user’s login details |
| It determines what permission does the user have? | It determines whether the person is user or not |

**SCENARIOS**

1. **Whatsapp chat messages**
2. Verify that user can send massages to any individual selected from his contact list.
3. Verify that chat window contains all the chat list with dp and name and last message preview of the other person with whom chat was initiated.
4. Verify that clicking a chat in the chat list opens a new window containing all the chats received and sent with the other person
5. Verify that the user can check the message delivered and read time for a message in the message info section
6. Verify that user can share or receive contact with the other person
7. Verify that user can create a group adding multiple people from his contact list
8. Verify that the user can send and receive the message in group chat
9. Verify that the user can send and receive images, audio, video, emoticons in chat to individuals
10. Verify that the user can send and receive images, audio, video, emoticons in group chats
11. Verify that the user can delete text, images, audio, video messages within a chat
12. Verify that the user can clear complete chat history in a individual or group chat
13. Verify that the user can archive chats in an individual or group chat
14. Verify that the user can block a user to prevent any message from getting received from the blocked contacts
15. Verify that the user can mark chats as favorite and access all chats marked as favorite from the favorite section
16. Verify that the user can receive whatsapp call from a person in his contact list
17. Verify that the user makes whatsapp call to the person in his contact list
18. **Write a scenario of pen**
19. Verify if you able to hold the pen comfortably
20. Verify if you able to write smoothly
21. Verify that the pen is not making any sound while writing
22. Verify the ink flow. It should not overflow nor get a break either
23. Verify the quality of material used for the pen
24. Verify if the pen color or text written on the pen is not getting removed easily
25. Verify if any other refill fits in the pen or not
26. Verify that the pen doesn’t have sharp edges or corners
27. Verify if ink and external assembly of the pen is made of non-toxic material
28. Verify for the waterproof ink
29. **Write a scenario of pen stand**
30. The pen stand should stably hold all the writing instruments without tipping over or losing its balance
31. Organize pens of different types in separate compartments within
32. The pen stand should be undamaged and maintain its structural integrity
33. The pen stand should be appropriately sized to fit on a typical desk without overcrowding it
34. The pen stand’s material should be of high quality and resistance to common blemishes
35. **Write a scenario of Door**
36. Verify that type of door like a single door or bi-folded door
37. Check the brand name of the door
38. Check the color of the door
39. Check the material of the door
40. Verify that how much force is needed to open or close the door
41. Verify that the stopper is available
42. Verify that door is non-scrachable or not
43. Verify that the door makes any sounds while opening or not
44. Verify that door is damaged or not
45. Verify that the door’s condition in different seasons like rainy, winter, and summer
46. **Write a scenario of ATM**
47. Verify the ATM card insertion slot is as per the specification
48. Verify the ATM machine accepts card and PIN details
49. Verify the error message by inserting a card incorrectly
50. Verify the error message by inserting an invalid card(expired)
51. Verify the error message by entering an incorrect PIN
52. Verify that PIN is encrypted
53. Verify that there is an action like blocking of card occurs when the total no. of incorrect PIN attempts get
54. Verify the user is allowed to do only one cash withdrawal transaction per PIN request
55. Verify the machine logs out of the user session immediately after successful withdrawal
56. Verify the message when there is no money in the ATM
57. Verify the language selection functionality

**Q-40 When to used usability testing?**

A small set of target end-users, use software application to expose usability defects. Usability testing mainly focuses on user’s ease of application to handle controls and ability of application to meet its objectives.

**Q-41** **What is the procedure for GUI testing?**

GUI testing can be categorized into three parts

1. Manual based testing

Under this approach, graphical screens are checked manually by testers in conformance with the requirements stated in the business requirements documents

1. Record and replay

GUI testing can be done using automation tools. This is done in 2 parts during record, test steps are captured by the automation tool. During playback, the recorded test steps are executed on the applicatuiuon under test.

1. Model based testing

A model is a graphical description of a system’s behavior. It helps us to understand and predict the system behavior. Models help in a generation of efficient test cases using the system requirements.

1. **Write the scenario of microwave oven**
2. Verify that the dimensions of the oven are as per the specification provided
3. Verify that the oven heats the food at the desired temperature properly
4. Verify the ovens functioning with the maximum attainable temperature
5. Verify that the oven’s door get closed smoothly
6. Check the maximum capacity of the oven and test its functioning with that volume of food
7. Verify the battery requirement of the microwave oven and check that is function’s smoothly at that power
8. Verify that the digital display is clearly visible and functions correctly
9. Verify that the oven’s plate rotation speed is optimal and not too high to spill the food kept over it
10. Verify that oven’s material is optimal for its use as an oven and as per the specification
11. Verify that the text written over the oven’s body is clearly readable
12. **Write a scenario of coffee vending machine**
13. Check if the power button of the coffee vending machine is working correctly after pressing the power button
14. Check the indicator lights are displaying correctly when the coffee vending machine is going to switch off or on
15. Check the temperature of is served coffee should be the same temperature
16. Check if some ingredients is finished then it should display an error message on the LED screen
17. Check the amount of coffee served should be equal to the specification
18. Check all the buttons of the coffee vending machine have an image text on them, which indicates what task will be performed if you press the button
19. Check the time they take to serve coffee should be the same as mentioned in the specification document
20. Check if the brand logo is visible in the specification document
21. Check in the coffee, the quantity of water and coffee beans, are working mix as expected
22. Check how much power the coffee vending machine consumes if the consumable power is equal to the authority mentioned in the specification documents
23. **Scenario of chair**
24. Check the material used in making the chair – wood, plastic etc.
25. Check if the chair’s leg are level to the floor
26. Check if there is a back support in chair
27. Check if there is support for hands in chair
28. Check the condition when washed with water or effect of water on chair
29. Check the height of the chair’s seat from the floor
30. Verify that the chair is stable enough to take an average human load
31. Check the usability of the chair as an office chair, normal household chair
32. Verify the paint’s type and color
33. Verify that the weight of the chair is as per the specifications
34. **Scenario of Facebook chat on mobile (positive & negative)**

**Positive –**

1. Check the user gets all received messages in his inbox
2. Check the active users display with a green dot in the message box
3. Check unread messages are highlighted so that the user can identify it
4. Check the user can search contacts in the message box
5. Check copy, and paste works in the chat box or not
6. Check that the user is able to share images
7. Check that the user is able to share videos
8. Check if user is not able to send blank message
9. Check the message contacts list will gwt displayed based on recent conversation
10. Check whether it is displaying a warning message and asked to scam the device if users get any malicious message
11. **Scenario of Gmail (receiving mail)**
12. Verify that all the read and unread emails are displayed in the inbox
13. Verify that the recently received email or unread emails are highlighted in bold in the inbox section
14. Verify that the recently received email has correct sender’s name or email id, subject of the email, its preview and date or time
15. Verify that the ‘new message’ popup is displaying on clicking on the compose email button
16. Verify that the user is navigated to the email content when clicking on the email in the inbox
17. Check if all the elements of the received email are correctly displayed or not
18. Check the already read emails should not be the highlighted
19. **Online shopping to buy product (flipkart)**
20. User navigation through all the pages of the application
21. Company logo, products, prices, and their descriptions should be visible
22. Product should be listed category-wise on the application
23. Product should be displayed which match the search criteria
24. Ensure correct count of product is displayed on search and filter
25. Adding product to card should be possible
26. All the products which are added to the cart should be purchasable by the user
27. Customer shouldn’t be able to add products to the cart when it is out of the inventory
28. All the products which are added to the cart should be purchasable by the user
29. Verify product price is correct along with shipping charges
30. **Scenario of wrist watch**
31. Verify the weight of the watch
32. Check if the watch is having a date and day display or not
33. Verify if the watch comes with any guarantee or warranty
34. Check the battery requirement of the watch
35. Verify the material of the watch and its strap
36. Verify that the numbers in the dial are clearly visible or not
37. Check if the watch is waterproof or not
38. Verify if the brand of the watch and check if its visible in the dial
39. Check if the clock is having stop watch, timers, and alarm functionality or not
40. Verify the color of the text displayed in the watch time, day, date and other information
41. **Scenario of Lift**
42. Verify the type of door of the lift is as per the specification
43. Verify the capacity of the lift in terms of the total weight
44. Verify that the lift moves to the particular floor as the button of the floor is clicked
45. Verify the buttons in the lift to close and open the door and numbers as per the number of floors
46. Verify lighting in the lift
47. Verify that at no point the lift door should open while in motion
48. Verify that in case of capacity limit is reached users are prompted with a warning alert- audio/visual
49. Verify if the interior is having proper air ventilation
50. Verify the time duration for which the door remains open by default
51. Verify the performance of the floor – the time taken to go to a floor
52. **Scenario of whatsapp group( generate group)**
53. Check if admin can add others as admin or not
54. Check admin can restrict users
55. Check if the admin user able to add people with the invite link
56. Check if the admin user can able to delete people
57. Check the admin can delete people and add them back to the group
58. Check admin can removes others from admin
59. Check the whatsapp performance when the users use multiple chats at the same time
60. Check the whatsapp performance when the user uses multiple functions like sending videos, images, and text simultaneously
61. Check whether the recent updates are displayed or not
62. Check every user can share information
63. **Scenario of instagram (video call with chat)**
64. Verify that the app provides an error message or notification
65. Ensure that the message are delivered and received by both users
66. Verify that the chat remains open
67. Verify that the call ends, and both users are disconnected
68. Verify that there is an “end call” button to conclude the video call
69. Verify that send an emoji in the chat and ensure it displays correctly during the call
70. Verify that there is a video call icon to initiate a video call
71. Verify that the call connects successfully
72. Verify that the other user can see and respond to the message
73. Verify that in the chat during the call, send an images or video file
74. **Scenario of whatsapp payment**
75. verify that the user payment data is handled securely and in compliance with data protection regulations
76. verify the process of issuing and receiving refunds for transaction
77. verify that refunds are processed correctly
78. verify that users are required to authenticate themselves before making a payment
79. verify network issues, payment failures or insufficient funds
80. check that appropriate error message are displaed to users
81. verify the process of linking and verifying a bank account
82. verify that the app maintains a transaction history with all the necessary details
83. check that the app enforces transaction limits
84. verify that the payment process is smooth, including selecting recipients, entering the amount, and confirming the transaction