**1.What is exploratory testing?**

* Exploratory testing is a concurrent process where Test design,
* execution and logging happen simultaneously.
* Testing is often not recorded.
* Makes use of experience, heuristics and test patterns.
* Testing is based on a test charter that may include
  + Scope of testing
  + A brief description of how test will be performed
  + Expected problem
* More structure than Error guessing
* Though the current trend in testing is to push for automation,
* exploratory testing is a new way of thinking.
* Exploratory testing is experience based.

**2.What is traceability matrix?**

* To protect against change you should be able to track back from every system component to the original requirement that caused it presence.
* There are types of traceability matrix:
* Forward Traceability: Mapping of Requirements to Test cases.
* Backward Traceability: Mapping of Test cases to Requirements.
* Bi-Directional Traceability: A good traceability matrix is the reference from test cases to basic documentation and vice versa.

**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 range.
* Boundary value analysis generates test cases that highlight error better than equivalence partitioning.
* The trick is to concentrate software testing efforts at the extreme ends of the equivalence classes.
* Boundary value analysis uses the same analysis of partitions as EP and is usually used in conjunction with EP in test case design.

**4.What is Integration testing?**

* Testing performed to expose defects in the interface and in the interaction between integrated components or system.
* Integration testing is a level of the software testing process where individual units are combined and tested as a group.

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

* Equivalence partitioning testing is testing that defines the aim is to treat groups of input as equivalent and to select one representative input to test them all.

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

**7.What is alpha testing?**

* Alpha testing is the first end-to-end testing of a product to ensure it meets the business requirement and functions correctly.
* Alpha testing is performed by the developer.

**8.What is beta testing?**

* Beta testing is always performed by the customer at their own site.
* Beta testing is always open to the market and public.

**9.What is component testing?**

* A minimal software item that can be tested in isolation.
* A unit is the smallest testable part of the software.
* The testing of individual software components.
* Unit testing is a level of the software testing process where individual unit of software system are tested.

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

* A requirement that specifies a function that a system or component must perform.

**11.What is Non-functional system testing?**

* Non-functional testing is the testing the attributes of the component or system that do not relate to functionality.
* Ex.. reliability, efficiency, usability, portability.

**12.What is 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 control like menus, buttons, icons and all types of bars etc.

**13.What is Adhoc testing?**

* Adhoc testing is an informal testing type with an aim to break the system.
* Main aim of adhoc testing is to find defects by random checking.
* Adhoc testing can be achieved with the testing technique called Error Guessing.

**14.What is load testing?**

* Load testing is a performance testing to check system behavior under load.
* Load testing is a kind of performance testing which determines a system’s performance under real-life load condition.

**15.What is stress testing?**

* Stress testing is done in order to check when the application fails by reducing the system resource such as RAM, HDD etc and keeping the number of users as constant.

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

* White box is Testing based on an analysis of the internal structure of the component or system.
* It is also known as structure based testing or glass box testing.
* List of white box testing technique.
* Branch condition testing
* Branch condition combination testing
* Modified condition decision testing
* Dataflow testing
* Linear code sequence and jump (LCSAJ) testing

**17.What is black box testing and list the types of black box testing technique?**

* Black box testing is the technique of testing without having any knowledge of the interior working of the application.
* Testing either functional or non-functional without reference to the internal structure of the component or system.
* It is also known as Specification based testing.

List of black box testing technique

Equivalence partitioning

Boundary value analysis

Decision table

State transition testing

Use-case testing

**18.Mention what are the categories of defect.**

* Data quality / Database defect
* Critical Functionality defect
* Functionality defect
* Security defect
* User Interface defect

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

* In big-bang testing, all components or module is integrated simultaneously after which everything is tested as whole.
* Here all the components are integrated together at once and then tested.

**20.what is the purpose of exit criteria?**

The purpose of exit criteria is to done when we stop testing either at the:

* End of all testing (product go live)
* End of phase of testing (hand over from system test to UAT)

**21.when should regression testing be performed?**

* Regression testing should be carried out when the system is stable and the system or the environment changes.
* When testing bug-fix releases as part of the maintenance phase.

**22.What is 7 key principles? Explain in details.**

**1. Testing shows the presence of defect:**

* Testing can show that defects are present, but cannot prove that there are no defect.
* Testing reduce the possibility of undiscovered defects remaining in the software but, even if no defect are found, it is not a proof of correctness.

**2. Exhaustive Testing is impossible:**

* Testing everything including all combination of inputs and precondition is not possible.
* We have learned that we cannot test everything.
* That is we must prioritise our testing efforts using a Risk Based Approach.

**3. Early Testing:**

* Testing activities should start as early as possible in the software or system development life cycle and should be focused on defined objectives.

**4. Defect Clustering:**

* A small number of modules contain most of the defects discovered during pre-release testing, or are responsible for the most operational failures.
* Defects are not evenly spread in the system they are clustered.

**5. Pesticide paradox:**

* If the same tests are repeated over and over again, eventually the same set of test case will no longer find any new defects.
* To overcome this “pesticide paradox”, the test case need to be regularly reviewed and revised and new and different tests need to be written to exercise different parts of the software or system to potentially find more defect.

**6. Testing is context dependent:**

* Testing is basically context dependent.
* Testing is done differently in different context.
* Different kind of sites are tested differently.

**7. Absence of Error fallacy:**

* If the system build is unusable and does not fulfil the user’s need and expectation then finding and fixing defects does not help.

**23.Difference between QA vs QC vs Testing.**

|  |  |  |
| --- | --- | --- |
| Quality Assurance | Quality Control | Testing |
| QA includes activities that ensure the implementation of processes, procedures and standards in context to verification of developed software and intended requirements. | It includes activities that ensure the verification of a developed software with respect to documented (or not in some cases) requirements. | It includes activities that ensure the identification of bugs/error/defects in a software. |
| Focuses on processes and procedures rather than conducting actual testing on the system. | Focuses on actual testing by executing the software with an aim 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. |

**24.Difference between smoke and sanity Testing.**

|  |  |
| --- | --- |
| 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 the “stability” of the system in order to proceed with more rigorous testing | The objective of the testing is to verify the “rationality” of the system in order to proceed with more rigorous testing |
| 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 |

**25.Difference between Verification and Validation.**

|  |  |
| --- | --- |
| Verification | Validation |
| It includes checking documents, design, codes and programs. | It includes testing and validating the actual product. |
| Verification is the static testing. | Validation is the dynamic testing. |
| It does *not* include the execution of the code. | It includes the execution of the code. |
| Methods used in verification are reviews, walkthroughs, inspections and desk-checking. | Methods used in validation are Black Box Testing, White Box Testing and non-functional testing. |
| It checks whether the software conforms to specifications or not. | It checks whether the software meets the requirements and expectations of a customer or not. |
| It can find the bugs in the early stage of the development. | It can only find the bugs that could not be found by the verification process. |

**26.Explain types of performance testing.**

* **Performance testing:**

Software performance testing is a means of quality assurance (QA). It involves testing software applications to ensure they will perform well under their expected workload.

* **Types of performance testing:**
* **Stress testing:** System is stressed beyond its specifications to check how and when it fails. Performed under heavy load like putting large number beyond storage capacity, complex database queries, continuous input to system or database load.
* **Stress testing tools**
  + Stress Tester
  + Neo Load
  + App Perfect
* **Load testing: –** It’s a performance testing to check system behavior under load. Testing an application under heavy loads, such as testing of a web site under a range of loads to determine at what point the system’s response time degrades or fails.
* **Load testing tools**
  + Load runner
  + Web Load
  + Astra Load Test
  + Review’s Web Load
  + Studio, Rational Site Load
  + Silk Performer
* **Endurance testing**
* **Spike testing**
* **Volume testing**
* **Scalability testing**

**27.What is Error, Defect, Bug and Failure?**

**Error:** A mistake in coding is called Error.

**Defect:** Error found by the tester is called Defect.

**Bug:** Defect accepted by the development team then it is called bug.

**Failure:** Build does not meet the requirement then it is called failure.

**28.Difference between priority and severity.**

|  |  |  |
| --- | --- | --- |
| **Parameters** | Severity in Testing | Priority in Testing |
| Definition | 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. |
| Parameter | 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. |
| Relation | Severity relates to the standards of quality. | Priority relates to the scheduling of defects to resolve them in software. |
| Value | The value of severity is objective. | The value of priority is subjective. |
| Change of Value | The value of Severity changes continually from time to time. | The value of Priority changes from time to time. |
| Who Decides the Defect | The testing engineer basically decides a defect’s severity level. | The product manager basically decides a defect’s priority level. |
| Types | There are 5 types of Severities: Cosmetic, Minor, Moderate, Major, and Critical. | There are 3 types of Priorities: High, Medium, and Low. |

**29.What is bug life cycle?**

* A computer bug is an error, flaw, mistake, failure, or fault in a computer program that prevents it from working correctly or produces an incorrect result. Bugs arise from mistakes and errors, made by people, in either a program’s source code or its design.

**30. Explain the difference between Functional testing and Non-Functional testing.**

|  |  |
| --- | --- |
| **Functional Testing** | Non-Functional Testing |
| 1. Functional testing is performed using the functional specification provided by the client and verifies the system against the functional requirements | Non-Functional testing checks the Performance, reliability, scalability and other non-functional aspects of the software system |
| 1. Functional testing is executed first | Non-functional testing should be performed after functional testing |
| 1. Manual testing or automation tools can be used for functional testing | Using tools will be effective for this testing |
| 1. Business requirements are the inputs to functional testing | Performance parameters like speed, scalability are inputs to non-functional testing. |
| 1. Functional testing describes what the product does | Non-functional testing describes how good the product works |
| 1. Easy to do manual testing | Tough to do manual testing |
| 1. Types of Functional testing are   ∙ Unit Testing  ∙ Smoke Testing  ∙ Sanity Testing  ∙ Integration Testing  ∙ White box testing  ∙ Black Box testing  ∙ User Acceptance testing  ∙ Regression Testing | Types of Non-functional testing are  ∙ Performance Testing  ∙ Load Testing  ∙ Volume Testing  ∙ Stress Testing  ∙ Security Testing  ∙ Installation Testing  ∙ Penetration Testing  ∙ Compatibility Testing  ∙ Migration 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.

**Test case:** Test cases involve the set of steps, conditions and inputs which can be used while performing the testing tasks.

**Test Script:** A test script is a set of instructions that will be performed on the system under test to test that the system functions as expected.

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

* A test plan is a detailed document which describes software testing areas and activities. It outlines the test strategy, objectives, test schedule, required resources (human resources, software, and hardware), test estimation and test deliverables.

**34.What is priority?**

* Priority defines the order in which we should resolve a defect.
* Should we fix it now, or can it wait? This priority status is set by the tester to the developer mentioning the time frame to fix the defect.
* If high priority is mentioned then the developer has to fix it at the earliest. The priority status is set based on the customer requirements.
* Priority is Relative and business focused.

**35.What is severity?**

* It is the extent to which the defect can affect the software.
* In other word it defines the impact that a given defect has on the system.
* Severity is absolute and customer focused.

**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.**

* It improves the quality of the product.
* It enhances the communication between the developing team and the testing team.
* It has the capability to adapt to multiple situations.

**38.Difference between priority and severity.**

|  |  |  |
| --- | --- | --- |
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| Types | There are 5 types of Severities: Cosmetic, Minor, Moderate, Major, and Critical. | There are 3 types of Priorities: High, Medium, and Low. |

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

1.Kanban

2.Scrum

3.Extreme Programming (XP)

4.Crystal

5.Dynamic System Development Method (DSDM)

6.Features Driven Development (FDD)

7.Lean Software Development

8.Scaled Agile Framework (SAF)

**40.Explain the difference between Authorization and Authentication in Web testing.**

**What are the common problems faced in Web testing?**

|  |  |
| --- | --- |
| **Authentication** | Authorization |
| In the Authentication process, the identity of users are checked for providing the access to the system. | While in Authorization process, a the person’s or user’s authorities are checked for accessing the resources. |
| In the authentication process, users or persons are verified. | While in this process, users or persons are validated. |
| It is done before the authorization process. | While this process is done after the authentication process. |
| It needs usually the user’s login details. | While it needs the user’s privilege or security levels. |
| Authentication determines whether the person is user or not. | While it determines What permission does the user have? |
| Generally, transmit information through an ID Token. | Generally, transmit information through an Access Token. |

**41.To create HLR & Test case of**

**1.Instagram, only first page**

**2.Facebook login page**

In Excel Sheet-1 (Assignment 2 Instagram HLR)

In Excel Sheet-2 (Assignment 2 Instagram login Test cases)

In Excel Sheet-3 (Assignment 2 Facebook HLR)

In Excel Sheet-4 (Assignment 2 Facebook login Test cases)

**42.To create HLR & Test cases of web based**

**1.Whatsapp web**

**2.Instagram web**

In Excel Sheet-5 (Assignment 2 WhatsApp web HLR)

In Excel Sheet-6 (Assignment 2 WhatsApp web Test cases)

In Excel Sheet-7 (Assignment 2 Instagram web HLR)

In Excel Sheet-8 (Assignment 2 Instagram web Test cases)

**43.To create HLR & Test cases of Art of Testing**

In Excel Sheet-9 (Assignment 2 Art of Testing HLR)

In Excel Sheet-10 (Assignment 2 Art of Testing Test cases)

**44.Write a scenario of only WhatsApp chat messages**

In Excel Sheet-11 (WhatsApp Chat test scenario)

**45.Write a scenario of Pen**

In Excel Sheet-12 (Pen test scenario)

**46.Write a scenario of Pen stand**

In Excel Sheet-13 (Pen stand test scenario)

**47.Write a scenario of Door**

In Excel Sheet-14 (Door test scenario)

**48.Write a scenario of ATM**

In Excel Sheet-15 (ATM test scenario)

**49.When to used Usability Testing?**

* We need usability testing because usability testing is to build a system with great user experience. Usability is not only used for software development or website development, but it is also used for product designing.
* And Customers must be comfortable with your application with the following parameters.
* The flow of an application should be good
* Navigation steps should be clear
* Content should be simple
* The layout should be clear
* Response time

**50.Write a scenario of Microwave Owen**

In Excel Sheet-16 (Microwave Owen test scenario)

**51.Write a scenario of Coffee vending machine**

In Excel Sheet-17 (Coffee vending machine test scenario)

**52.Write a scenario of Chair**

In Excel Sheet-18 (Chair test scenario)

**53.To create Test scenario (Positive & Negative)**

**1.Facebook chat on mobile**

In Excel Sheet-19 (Facebook chat test scenario)

**2.Gmail (Receiving Mail)**

In Excel Sheet-20 (Gmail test scenario)

**3.Online shopping to buy product (Flipkart)**

In Excel Sheet-21 (Flipkart test scenario)

**54.Write a scenario of Wrist watch**

In Excel Sheet-22 (Wrist watch test scenario)

**55.Write a scenario of Lift (Elevator)**

In Excel Sheet-23 (Lift test scenario)

**56.Write a scenario of WhatsApp group (generate group)**

In Excel Sheet-24 (WhatsApp group test scenario)