Software Testing Assignment

Module–2(Manual Testing)

1). what is Exploratory Testing?

Though the current trend in testing is to push for automation, exploratory testing is a new way of thinking. Automation has its limits.

2). what is traceability matrix?

Traceability matrix to protect against changes you should be able to trace back from every system component to the original requirement that caused its presence.

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?

Aim is to treat groups of inputs as equivalent and to select one representative input to test them all

5.) What is Integration testing?

Integration testing is associated with the architectural design phase. Integration tests are performed to test the coexistence and communication of the internal modules within the system.

Types of Integration Testing:

1.) Bing Bang Integration Testing
2.) Incremental Integration Testing

a. Top-Down Approach

b. Bottom-Up Approach

6.) What determines the level of risk?

Risk should be evaluated at the Business Level, Technological Level, Project Level and Testing Level.

Risk also used to decide where to start and where more testing is needed

7.) What is Alpha testing?

It is always performed by the developers at the software development site.

8.) What is beta testing?

It is always performed by the customers at their own site.

9.) What is component testing?

Component (Unit) – A minimal software item that can be tested in isolation. It means “A unit is the smallest testable part of software.”

10.) What is functional system testing?

Functional Testing based on an analysis of the specification of the functionality of a component or system.

11.) What is Non-Functional Testing?

Non-Functional testing the attributes of a component or system that do not relate to functionality, e.g. reliability, efficiency, usability, interoperability, maintainability and portability

12.) What is GUI Testing?

Graphical User Interface Testing is to test the interface between the application and the end user.

13.) What is Adhoc testing?

Adhoc testing is concern with the application testing without following any rules or test cases for ad hoc testing one should have strong knowledge about the application.

Types of Ad-hoc testing:

- Buddy Testing : - Developer + Tester
- Pair testing : - Tester + Tester
- Monkey Testing : - Randomly test the product or application

14.) What is load testing?

It is verify that that the system /application can handle the expected number of transactions and to verify the system/application behavior under both normal and peak load conditions.

15.) What is stress Testing?

It even tests beyond the normal operating point and evaluates how the system works under those extreme conditions.

Types of Stress Testing	**Stress Testing Tools**
• Application Stress Testing	Stress Tester
• Transactional Stress Testing	Neo Load
• Systemic Stress Testing	App Perfect
• Exploratory Stress Testing	

16.) What is white box testing and list the types of 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 " or " glass box " testing technique because here the testers require knowledge of how the software is implemented , how it works

- **List of white box testing**
    - Statement coverage
    - Decision coverage
    - Condition coverage

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

The technique of testing without having any knowledge of the interior workings of the application is Black Box testing.

- **black box testing techniques**
    - Equivalence partitioning
    - Boundary value analysis
    - Decision Tables
    - State transition testing
    - Use case testing
    - Other black box testing

18.) Mention what are the categories of defects?

There are some categories which are as below

- Data quality/Database Defects
- Critical Functionality Defects
- Functionality Defects
- Security Defects
- User Interface Defects

19.) Mention what bigbang testing is?

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?

Purpose of exit criteria is to define when we STOP testing either at the:

- End of all testing – i.e. product Go Live
- End of phase of testing (e.g. hand over from System Test to UAT)

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

- when the system is stable and the system or the environment changes
- when testing bug-fix releases as part of the maintenance phase
- It should be applied at all Test Levels
- It should be considered complete when agreed completion criteria for regression testing have been met
- Regression test suites evolve over time and given that they are run frequently are ideal candidates for automation

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

1. **Testing shows presence of Defects**
   - Testing can show that defects are present, but cannot prove that there are no defects.
2. **Exhaustive Testing is Impossible!**
   - Every combination of input is not check to possible
3. **Early Testing**
   - It will start as soon as possible
4. **Defect Clustering**
   - If you have and error make sure it will not spared in your system
5. **The Pesticide Paradox**
   - Regularly review and revised
6. **Testing is Context Dependent**
   - Every website having a different way to check
7. **Absence of Errors Fallacy**
   - When testing is perfect but requirement does not match

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

Sr.No.	Quality Assurance	Quality Control	Testing
1	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 (or not in some Cases) requirements.	Activities which ensure the identification of bugs/error/defects in the Software.
2	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.
3	Process oriented activities.	Product oriented activities.	Product oriented activities.
4	Preventive activities.	It is a corrective process.	It is a preventive process.
5	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?

Sr.No.	Smoke Testing	Sanity Testing
1	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
2	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 to proceed with more rigorous testing
3	This testing is performed by the developers or testers	Sanity testing is usually performed by testers
4	Smoke testing is usually documented or scripted is unscripted	Sanity testing is usually not documented and
5	Smoke testing is a subset of Regression testing	Sanity testing is a subset of Acceptance testing
6	Smoke testing exercises the entire system from end to end	Sanity testing exercises only the particular component of the entire system
7	Smoke testing is like General Health Check	Sanity Testing is like specialized health check up

25.) Difference between verification and Validation

Sr.No.	Verification	Validation
1	**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.	The process of evaluating software during or at the end of the development process to determine whether it satisfies specified business Requirements.
2	**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.	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 fulfills its intended use when placed in its intended environment
3	**Question:** Are we building the product right?	Are we building the right product?
4	**Evaluation items :** Plans, Requirement Specs, Design Specs, Code, Test Cases	The actual product/software.
5	**Activates :** · Reviews ·Walkthroughs · Inspections	· Testing

26.) Explain types of Performance testing.

Performance testing is a type of software testing that is conducted to evaluate the speed, responsiveness, stability, and scalability of a software application under different conditions. There are several types of performance testing.

1.) Load Testing: - To evaluate the system's behavior under a

specificexpected load.

2.) **Stress Testing: -** To evaluate the system's behaviour under extremeconditions or beyond its maximum capacity.
3.) **Endurance Testing: -** To evaluate the system's performance over an extended period to ensure its stability and reliability under sustained use.
4.) **Scalability Testing: -** To assess the system's ability to handle increased loadby adding resources, such as hardware or network bandwidth.
5.) **Spike Testing: -** To assess the system's performance under a sustained load over an extended period to identify performance issues that may arise with prolonged use.
6.) **Volume Testing: -** To assess how well the application handles a large amount of data.

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

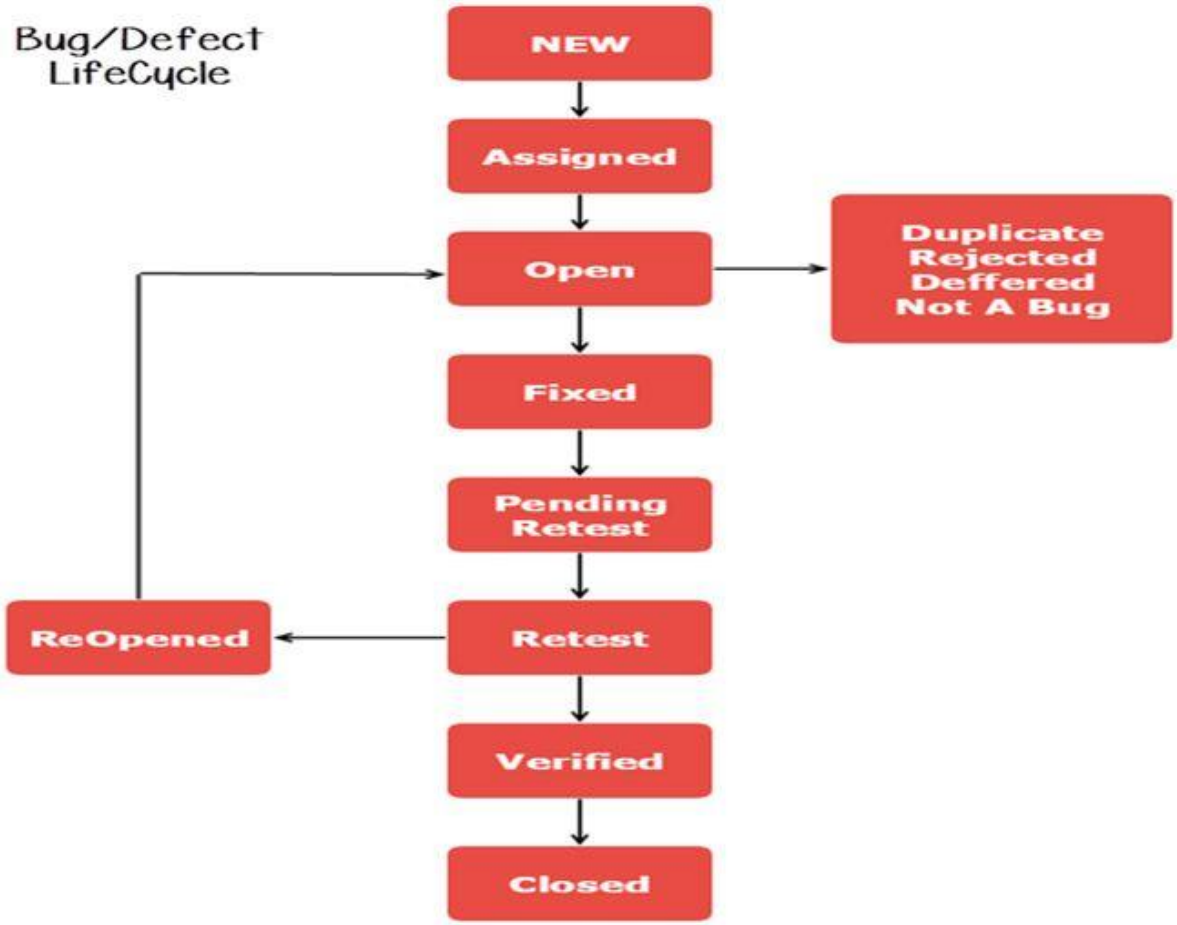
- **Error:** We can't compile or run a program due to a mistake in a program. If a developer unable to successfully compile or run a program, then they call it as and error.
- **Defect:** The variation between the actual results and expected results is known as a defect. If a developer finds as issue and correct it by himself in the development phase, then it's called a defect.
- **Bug:** If tester find and mismatch in the application/system in testing phase, then they call it as bug.
- **Failure:** Once the product is deployed and customers find any issues then they call the product as a failure product. After release, if an end user finds an issue, then that particular issue is called as a failure.

28.) Difference between Priority and Severity

Sr.No.	Priority	Severity
1	Defect Priority has defined the order in which the developer should resolve a defect	Defect Severity is defined as the degree of impact that a defect has on the operation of the product
2	Priority is associated with scheduling	Severity is associated with functionality or standards
3	Priority indicates how soon the bug should be fixed	Severity indicates the seriousness of the defect on the product functionality
4	Priority of defects is decided in consultation with the manager/client	QA engineer determines the severity level of the defect
5	Priority status is based on customer requirements	Severity status is based on the technical aspect of the product
6	Priority is categorized into three types • Low • Medium • High	Severity is categorized into five type • Critical • Major • Moderate • Minor • Cosmetic

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.



The different phases of Bug life cycle are: -

1. **New: -** When a new defect is logged and posted for the first time. It is assigned a status as NEW.

2. Assigned: - The bug report is reviewed, and the responsibility for fixing it is assigned to a developer.

3. Open: - The developer begins investigating and fixing the bug.

4. Fixed: -The developer has implemented a fix for the bug.

5. Pending Retest: - The fixed code is ready for testing.

6. Retest: - The testing team retests the fixed code to ensure that the bug has been successfully resolved.

7. Closed: - The bug has been successfully fixed, retested, and verified. It is considered closed.

8. Reopen (Optional): - If the bug is found to persist after retesting, it may be reopened, and the cycle starts again.

30.) Explain the difference between Functional testing and Nonfunctional testing

Sr.No.	Function Testing	Non Function Testing
1	Functional testing is performed using the functional specification provided by the client and verifies the system against the functional requirements.	Non-Functional testingchecksthe Performance, reliability, scalability and other non-functional aspects of the software system.
2	Functional testing is executed first	Non functional testing should be performed after functional testing
3	Manual testing or automation tools can be used for functional testing	Using tools will be effective for this testing
4	Business requirements are the inputs to functional testing	Performance parameters like speed , scalability are inputs to non-functional testing.
5	Functional testing describes what the product does	Nonfunctional testing describes how good the product works
6	Easy to do manual testing	Tough to do manual testing
7	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 Nonfunctional 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)?

Sr.No.	STLC	SDLC
1	SDLC is mainly related to software development	STLC is mainly related to software testing
2	SDLC involves total six phases or steps	STLC involves only five phases or steps
3	Besides development other phases like testing is also included	If focuses only on testing the software
4	It helps in developing good quality software	It helps in making the software defects free
5	SDLC phases are completed before the STLC phases	STLC phases are performed after SDLC phases.
6	Creation of reusable software systems is the end results of SDLC	A tested software systems is the end result of STLC

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

- **Test scenarios:** A Scenario is any functionality that can be tested. It is also called Test Condition, or Test Possibility.
  - Test Scenario is 'What to be tested'
  - Test scenario is nothing but test procedure.
- **test cases:** Test cases involve the set of steps, conditions and inputs which can be used while performing the testing tasks.
  - Test Case is 'How to be tested'
  - Test cases are derived (or written) from test scenario.
- **test script:** A set of sequential instruction that detail how to execute a core business function
  - One script is written to explain how to simulate each business scenario
  - Identifies the expected results for each step, if applicable

33.) 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.
- 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

➢ **Deliverables of Requirement Phase Testing**

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

34.) What is priority?

Defect Priority has defined the order in which the developer should resolve a defect.

35.) What is severity?

Defect Severity is defined as the degree of impact that a defect has on the operation of the product.

36.) Bug categories are…

➢ **There are some Categories**

- Security

- Database
- Functionality(Critical/General)
- UI

37.) Advantage of Bugzila .

- Open source, free bug tracking
- Automatic Duplicate bug detection
- Search option with advanced features
- File/Modify bugs by mail
- Move bugs between installs
- Multiple authentication methods
- Time tracking
- Automated bug reporting, has an API to interact with system

38.) Difference between priority and severity

Ans. Same as 28 Answer

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

1.) Scrum methodology:

Scrum is a lightweight framework of Agile Project Management, it can be adopted to conduct iterative and all types of incremental projects. Due to specific characteristics like simplicity, sustained productivity and strength for blending several underlying approaches adapted by other agile methods, Scrum has obtained popularity over the years

2.) Kanban:

Kanban is an eminently visual workflow management approach, that can be employed for visualizing and thoroughly maintaining the making of products, it focuses on continual delivery of the product , but is not making stress to the entire software development life cycle.

Similar to scrum, kanban is the process developed for supporting collaborative teamwork more effectively.

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

Sr.No.	Authorization	Authentication
1	Authentication verifies who the user is.	Authorization determines what resources a user can access.
2	Authentication works through passwords, one-time pins, biometric information, and other information provided or entered by the user.	Authorization works through settings that are implemented and maintained by the organization.
3	Authentication is the first step of a good identity and access management process.	Authorization always takes place after authentication.
4	Authentication is visible to and partially changeable by the user.	Authorization isn't visible to or changeable by the user.
5	Example: By verifying their identity, employees can gain access to an HR application that includes their personal pay information, vacation time, and 401K data.	Example: Once their level of access is authorized, employees and HR managers can access different levels of data based on the permissions set by the organization.

41.) When to used Usability Testing?

- Usability testing is a method of testing the functionality of a website, app or other digital product by observing real users as they attempt to complete tasks on it. The users are usually observed by researchers working for a business.

- Usability testing can and should be conducted on the current iteration of a product before beginning any new design work, after you have begun the strategy work around a brand new site or app.

42.) What is the procedure for GUI Testing?

- Check all the GUI elements for size, position, width, length and acceptance of Characters or numbers. For instance, you must be able to provide inputs to the input fields.
- Check you can execute the intended functionality of the application using the GUI.
- Check Error Messages are displayed correctly
- Check for Clear demarcation of different sections on screen
- Check Font used in application is readable
- Check the alignment of the text is proper
- Check the Color of the font and warning messages is aesthetically pleasing
- Check that the images have good clarity
- Check that the images are properly aligned
- Check the positioning of GUI elements for different screen resolution.