**Assignment 2**

**( module 2 manual testing )**

1. **What is software testing?**

Software testing is a process used to identify correctness, completeness and quality of developed software.

1. **What is Exploratory Testing?**

When software is ready but we do not have requirements, we try to explore all the functions of software, for that we do testing, this kind of testing is called Exploratory. testing.

1. **What is a traceability matrix?**

A Traceability Matrix is a document that correlates any two-baseline documents that require a many-to-many relationship to check the completeness of the relationship.

1. **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.

In simple words, BVA is a technique used to check boundaries of input, it is better than method equivalence partitioning.

1. **What is Equivalence Partitioning testing?**

In this method of testing, first we do partition of data into various classes and then we

select one test case of each divided classes, which save our time for testing and

make it easy to perform tests that cover all the possible test cases.

1. **What is Integration testing?**

Integration Testing is a level of the software testing process where individual units are

combined and tested as a group.

1. **What determines the level of risk?**
2. **What is Alpha testing?**

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

Unit testing, integration testing and system testing when combined are known as

alpha testing.

It is considered as the User Acceptance Testing (UAT) which is done at the

developer's area.

It is always performed in a Virtual Environment.

1. **What is beta testing?**

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

It is also considered as the User Acceptance Testing (UAT) which is done at customers or users area.

It is performed in a Real Time Environment.

Beta testing can be considered “pre-release” testing.

1. **What is component testing?**

Component testing is also known as Unit testing.

Unit testing means testing each individual module of software.

It is always done by the developer himself.

Component or unit is the smallest testable part of software.

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

Functionality testing is done to check whether our software performs functions described in requirement documents or not.

Functionality testing is done to test behaviour of software.

1. **What is Non-Functional Testing?**

Testing of those requirements that do not relate to functionality such as performance, security, Recovery, compatibility, how easy to use and install, etc.

It is mainly focused on the customer expectations, while functionality is focused on the requirements of the customer.

1. **What is GUI Testing?**

Graphic User Interface testing is the process of testing the user interface of software.

Basically it tests whether the look of software is perfect or not, how easily users will use software, etc.

1. **What is Adhoc testing?**

Adhoc testing is informal testing done without any test cases or test plan, aimed to break the software.

Main aim of this testing is to find defects by random checking.

Adhoc testing can be achieved with the testing technique called Error Guessing.

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

White Box Testing based on an analysis of the internal structure of the component or system.

White box testing is also called glass testing or open box testing.

List of types of white box testing is below :

1. Structural Testing
2. Test/Code Coverage

16. **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.

List of types of black box testing is below :

1) Equivalence partitioning ,

2) Boundary value analysis,

3) Decision tables,

4) State transition testing,

5) Use-case Testing.

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

Common Types of Defects:- Arithmetic Defects., Logical Defects, Syntax Defects, Multithreading Defects, Interface Defects, Performance Defects

**18. Mention what bigbang testing is?**

In Big Bang integration testing all components or modules are integrated

simultaneously, after which everything is tested as a whole.

Big Bang testing has the advantage that everything is finished before integration

testing starts.

The major disadvantage is that in general it is time consuming and difficult to trace

the cause of failures because of this late integration

**19. What is the purpose of exit criteria?**

Exit criterion is used to determine whether a given test activity has been

completed or not. Exit criteria are used to determine whether testing is

completed or not as well as it shows the time limit, project budget and other

factors

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

Regression testing is performed to find out whether the updates or changes

had caused new defects in the existing functions**.**

Regression testing is conducted on the modified build to make sure there will

not impact existing functionalities because of changes like

adding/deleting/modifying feature/s.

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

The 7 key principles are given below :

**1) Testing shows presence of Defects**

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

defects.

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.

As we find more defects, the probability of undiscovered defects remaining in a

system reduces.

**2) Exhaustive Testing is Impossible**

Testing everything including all combinations of inputs and preconditions is not

possible.

So, instead of doing the exhaustive testing we can use risks and priorities to focus

testing efforts.

**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.

Testing activities should start as early as possible in the development life cycle.

These activities should be focused on defined objectives – outlined in the Test

strategy.

**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.

In other words, most defects found during testing are usually confined to a small

number of modules.

**5) Pesticide Paradox**

If the same tests are repeated over and over again, eventually the same set of

test cases will no longer find any new defects.

For each time we have to update our test plan, test cases and test scenarios, for . for this purpose, give same website to different tester to find most defects in the

software.

**6) Testing is Context Dependent**

Testing is basically context dependent.

Testing is done differently in different contexts**.**

Different kinds of sites are tested differently

**7) Absence of Errors Fallacy**

If the system built is unusable and does not fulfil the user’s needs and

expectations then finding and fixing defects does not help.

Even after defects have been resolved it may still be unusable and/or does not

fulfil the users’.

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

| **Sr.no** | **Quality Assurance** | **Quality Control** | **Tester** |
| --- | --- | --- | --- |
| 1 | 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. |
| 2 | Process oriented  activities | Product oriented activities. | Product oriented activities. |
| 3 | Preventive activities. | It is a corrective process. | It is a preventive process. |
| 4 | 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. |

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

| **Sr no** | **Smoke testing** | **Sanity testing** |
| --- | --- | --- |
| 1 | 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 |
| 2 | 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 |
| 3 | This testing is performed by the developers  or testers | Sanity testing is usually performed by testers |
| 4 | Smoke testing is a subset of Regression testing | Sanity testing is a subset of Acceptance testing |
| 5 | Smoke testing is usually documented  or scripted | Sanity testing is usually not documented and  is unscripted |

**24) Difference between verification and Validation**

| **Criteria** | **Verification** | **Validation** |
| --- | --- | --- |
| 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. |
| 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 is  being built according to  the requirements and  design specifications. In other  words, to ensure that work  products meet their  specified requirements. |
| Question | Are we building the product right? | Are we building the right product? |

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

There are many types of performance testing described below :

1. **Load testing** :- In this testing we gradually increase the load on the application then check speed of the application.
2. **Stress testing** :- In this testing we suddenly increase/decrease the load on the application then check speed of the application.
3. **Volume testing** :- in this testing we check how much data we are able to handle by the application.

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

Error is programming mistake done by programmer, when this error is found by the tester/QA then it is called Defect, when development team accept that defect then it is called Bug, when developed feature or application does not match which customer requirements then it is called failure.

**27) Difference between Priority and Severity**

Severity :- it describes the impact of defects on the application, for example the link is not working, then its severity is high.

Severity has four types: - Blocker, Critical, Major,Minor .

Priority :- It is related to defect fixing urgency, for example the spelling of company is wrong in the home page then its priority is high but severity is low.

We can define priority in 3 ways : P0, P1, P3.

**28) What is the Bug Life Cycle?**

Bug Life cycle is the journey of a defect cycle, which a defect goes through during its lifetime. It varies from organisation to organisation and also from project to project as it is governed by the software testing process and also depends upon the tools used.

**29)Explain the difference between Functional testing and NonFunctional testing**

| 1 | A requirement that specifies a function that a system or  system component must perform | Testing of those requirements that do not relate to functionality |
| --- | --- | --- |
| 2 | Functional testing is done based on the business requirement. | Non- functional testing is done based on the customer expectation and Performance requirement. |
| 3 | It is carried out manually. example :- Black box testing method | It is more feasible to test using automated tools. |
| 4 | Functional testing has the following types:  Unit testing, Integration testing ,System Testing,Acceptance Testing | Non functional testing includes:  Performance testing, Load Testing, Stress testing, Volume testing, Security testing, Installation testing, Recovery testing |
| 5 | It is testing the functionality of the software. | It is testing the performance of the functionality of the software. |
| 6 | Example: A Login page must show textboxes to Enter the username and password. | Example: Test if a Login page is getting loaded in 5 seconds. |

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

| **Sr.no** | **STLC** | **SDLC** |
| --- | --- | --- |
| 1 | STLC is mainly related to software testing | SDLC is mainly related to software development |
| 2 | STLC involves only five phases or steps | SDLC involves a total of six phases or steps |
| 3 | In STLC, less number of members (testers) are needed | In SDLC, more number of members (developers) are required for the whole process |
| 4 | STLC phases are performed after SDLC phases | SDLC phases are completed before the STLC phases |

**31)What is the difference between test scenarios, test cases, and test scripts?**

| **sr.no** | **test scenarios** | **test cases** | **test scripts** |
| --- | --- | --- | --- |
| 1 | Is any functionality that can be tested | Is a set of actions executed to verify particular features | Is set of instructions to test application automatically |
| 2 | Is derived from test artefacts like BRS,SRS | Is mostly derived from test scenarios | Is mostly derived from test cases |
| 3 | Helps test the end to end functionality in an agile way | Helps in exhaustive testing of application | Helps to test specific things repeatedly |
| 4 | Is more focused on what to test | Is focused on what to test and how to test | Is focused on the expected result |
| 5 | Takes less time and fewer resources to create | Requires more resources and time | Requires less time for testing but more resources for script creating and updating |

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

It is a high level document in which how to perform testing is described. The Test Plan

document is usually prepared by the Test Lead or Test Manager and the focus of the

document is to describe what to test, how to test, when to test and who will do what test

A test plan acts as a blueprint or instruction manual on how and what you will test for a product release or sprint. It defines the scope, schedule, approach, and resources for your test efforts. Testing creates a logical connection between all the components of product development.

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

Scrum, Kanban, Extreme Programming (XP), Lean Development e Crystal.

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

Authentication and authorization are two vital information security processes that administrators use to protect systems and information. Authentication verifies the identity of a user or service, and authorization determines their access rights.

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

Integration. Integration testing exposes problems with interfaces among different program components before deployment. ...

* Interoperability,
* Security,
* Performance,
* Usability,
* Quality Testing, Exceptional Services