Software Testing Assignment

Module – 2 (Manual Testing)

Q.1 What is Exploratory Testing?

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

- Is not random testing but it is Adhoc testing with purpose of find bugs
- Is structured and rigorous
- Is cognitively (thinking) structured as compared to procedural structure of scripted testing. This structure comes from Charter, time boxing etc.
- Is highly teachable and manageable
- Is not a technique but it is an approach. What actions you perform next is governed by what you are doing currently

Q.2 What is traceability matrix?

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

- A software process should help you keeping the virtual table up-to-date.
  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 References from test cases to basis documentation and vice versa.

Q.3 What is Boundary value testing?

Ans. Boundary value analysis is a methodology for designing test cases that concentrates software testing effort on cases near the limits of valid ranges

- Boundary value analysis is a method which refines equivalence partitioning.
- Boundary value analysis generates test cases that highlight errors better than equivalence partitioning.
- The trick is to concentrate software testing efforts at the extreme ends of the equivalence classes.

- At those points when input values change from valid to invalid errors are most likely to occur.

Q.4 What is Equivalence partitioning testing?

Ans. Aim is to treat groups of inputs as equivalent and to select one representative input to test

- EP can be used for all Levels of Testing
- Equivalence partitioning is the process of defining the optimum number of tests
- Reviewing documents such as the Functional Design Specification and
- Detailed Design Specification, and identifying each input condition within a function, Selecting input data that is representative of all other data that would likely invoke the same process for that particular condition.

Q.5 What is Integration testing?

Ans. Testing performed to expose defects in the interfaces and in the interactions between integrated components or systems

Integration Testing is a level of the software testing process where individual units are combined and tested as a group.

- Component Integration Testing
- System Integration Testing

Q.6 What determines the level of risk?

Ans. A properly designed test that passes, reduces the overall level of Risk in a system

- Risk – 'A factor that could result in future negative consequences; usually expressed as impact and likelihood'
- When testing does find defects, the Quality of the software system increases when those defects are fixed
- The Quality of systems can be improved through Lessons learned from previous projects
- Analysis of root causes of defects found in other projects can lead to Process Improvement

Q.7 What is Alpha testing?

- It is always performed by the developers at the software development site.
- Sometimes it is also performed by Independent Testing Team.
- Alpha Testing is not open to the market and public
- It is conducted for the software application and project.
- It is always performed in Virtual Environment.
- It is always performed within the organization.
- It is the form of Acceptance Testing.
- Alpha Testing is definitely performed and carried out at the developing organizations location with the involvement of developers.
- It comes under the category of both White Box Testing and Black Box Testing.

Q.8 What is beta testing?

- It is always performed by the customers at their own site.
- It is not performed by Independent Testing Team.
- Beta Testing is always open to the market and public.
- It is usually conducted for software product.
- It is performed in Real Time Environment.
- It is always performed outside the organization.
- It is also the form of Acceptance Testing.
- Beta Testing (field testing) is performed and carried out by users or you can say people at their own locations and site using customer data.
- It is only a kind of Black Box Testing.

Q.9 What is component testing?

Ans. Unit tests find problems early in the development cycle. Unit testing is performed by using the white box testing method.

Three steps of component texting

- Design test that defines how you think a small part of the software should behave (Incremental development).
- Make the test run as easily and quickly as you can. Don't be concerned about the design of code, just get it to work!

- Clean up the code. Now that the code is working correctly, take a step back and re- factor to remove any duplication or any other problems that were introduced to get the test to run.

Q.10 What is functional system testing?

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

There is two types

- Requirement Based Functional Testing
- Process Based Testing

Q.11 What is Non-Functional Testing?

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

Q.12 What is GUI Testing?

Ans. 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.

Q.13 What is Adhoc testing?

Ans. Adhoc testing is an informal testing type with an aim to break the system.

- It does not follow any test design techniques to create test cases.
- In fact is does not create test cases altogether
- This testing is primarily performed if the knowledge of testers in the system under test is very high.
- Testers randomly test the application without any test cases or any business requirement document.
- Adhoc Testing does not follow any structured way of testing and it is randomly done on any part of application.
- Main aim of this testing is to find defects by random checking.
- Adhoc testing can be achieved with the testing technique

Q.14 What is load testing?

Ans. Load testing is a kind of performance testing which determines a system's performance under real-life load conditions. This testing helps determine how the application behaves when multiple users access it simultaneously.

Load testing does not break the system

Q.15 What is stress Testing?

Ans. Stress testing is used to test the stability & reliability of the system. This test mainly determines the system on its robustness and error handling under extremely heavy load conditions.

Stress testing tries to breaks the system

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

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

The different types of white box

- Statement coverage
- Decision coverage
- Condition coverage

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

Ans. Black-box testing: Testing, either functional or non-functional, without reference to the internal structure of the component or system.

- Equivalence partitioning
- Boundary value analysis
- Decision tables
- State transition testing
- Use-case Testing

Q.18 Mention what are the categories of defects?

Ans. There are three types of defect every importer needs to know. Quality control professionas typically classify quality defect into three main categories, minor, major and critical. The nature and severity of a defect determines in which of the three categories it belongs.

Q.19 Mention what bigbang testing is?

Ans. Is Big Bang integration testing all components or modules is integrated simultaneously, after which everything is tested as a whole. Big Bang testing has the advantage that everything is finished before integration testing starts.

Q.20 What is the purpose of exit criteria?

Ans. Exit criterion is used to determine whether a given test activity has been completed or NOT. Exit criteria can be defined for all of the test activities right from planning, specification and execution. Exit criterion should be part of test plan and decided in the planning stage.

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

Ans. Regression testing is necessary after any feature (or application) enhancement, bug fix, or configuration changes. For example, when developers add a new widget to an application. As more regressions are found in software products, companies are moving towards test automation to perform regression tests.

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

Ans. 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.

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.

For example: In an application in one screen there are 15 input fields, each having 5 possible values, then to test all the valid combinations you would need 30 517 578 125 (515) tests.

This is very unlikely that the project timescales would allow for this number of tests.

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.

Defects are not evenly spread in a system

They are ‘clustered’

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

5. The 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.

To overcome this “pesticide paradox”, the test cases 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 defects.

Testing identifies bugs, and programmers respond to fix them

6. Testing is Context Dependent

Testing is basically context dependent.

Testing is done differently in different contexts

Different kinds of sites are tested differently.

For example Safety – critical software is tested differently from an e-commerce site.

7. Absence of Errors Fallacy

If the system built is unusable and does not fulfill the user's needs and expectations then finding and fixing defects does not help.

If we build a system and, in doing so, find and fix defects ....

It doesn't make it a good system

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

Ans.

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	QC can be considered as the	Testing is the subset of

	Cycle (STLC).	subset of Quality Assurance.	Quality Control.

Q.24 Difference between Smoke and Sanity?

Ans.

Sr no	Smoke Testing	Sanity Testing
1	Check the critical functionality	Check the new functionality
2	It is done in initial stage	It is done after 30 build
3	It checks the stability	It check the sanity / rationality
4	Part of acceptance testing	Part of regression testing
5	General health check up	Advance health check up
6	Done by tester and developer	Done by tester
7	It check the system end to end	It checks only a particular function of entire system

Q.25 Difference between verification and Validation

Ans. Verification is the process of checking that a software achieves its goal without any bugs. It is the process to ensure whether the product that is developed is right or not. It verifies whether the developed product fulfills the requirements that we have. Verification is static testing. Verification means Are we building the product right?
Validation is the process of checking whether the software product is up to the mark or in other words product has high level requirements. It is the process of checking the validation of product i.e. it checks what we are developing is the right product. it is validation of actual and expected product. Validation is the dynamic testing. Validation means Are we building the right product?

Q.26 Explain types of Performance testing.

- Load testing measures system performance as the workload increases. ...
- Stress testing….
- Spike Testing. ...
- Endurance Testing. ...
- Scalability Testing. ...
- Volume Testing. ...
- Identify the Testing Environment. ...

- Identify Performance Metrics.

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

Ans. A mistake in coding is called error, error found by tester is called defect, defect accepted by development team then it is called bug, build does not meet the requirements then it is failure

Q.28 Difference between Priority and Severity

Ans.

Sr no.	Priority	Severity
1	Priority is a team that defines how fast we need to fix a defect	Severity is a term that denotes how severely a defect can affect the function of the software
2	Priority is basically a parameter that decides the order in which we should fix the defects	Severity is basically a parameter that denotes the total impact of a given defect on any software
3	Priority relates to the scheduling of defects to resolve them in software	Severity relates to the standards of quality
4	The value of priority is subjective	The value of severity is objective
5	The value of priority changes from time to time	The value of severity changes continually from time to time
6	The product manager basically decides a defect's priority level	The testing engineer basically decides a defect's severity level
7	There are 3 types of priorityes : high, medium and low	There are 5 types of severities : cosmetic, minor, moderate, major and critical

Q.29 What is Bug Life Cycle?

Ans. The duration or time span between the first time defects is found and the time that it is closed successfully, rejected, postponed or deferred is called as Defect Life Cycle

Q.30 Explain the difference between Functional testing and Non Functional testing

Ans.

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 testing checks the 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

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

Ans.

Sr.no	SDLC	STLC

1	SDLC is mainly related to software development	STLC is mainly related to software testing
2	Besides development other phases like testing is also included	It focuses only on testing the software
3	SDLC involves total six phases or steps	STLC involves only five phases or stpes
4	In SDLC, more number of members (developers) are required for the whole process	In STLC less number of member (testers) are needed
5	Goal of SDLC is to complete successful development of software	In STLC testing team (test lead or test architect) makes the plans and designs
6	In SDLC development team makes the plans and designs based on the requirements	Goal of STLC is to complete successful testing of software
7	It helps in developing good quality software	It helps in making the software defects free

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

Ans.

Sr.no	Test case	Test script
1	A test case is high document with instruction on the specific functionality of the software product to be tested	Test script a step-by-step instruction to test each software product's functionality (test case)
2	A test case is the software development life cycle's 'what to test' component	Test script is the software development life cycle's 'how to test' component
3	Test case are written in simple english	Test script are written in programming languages like VB scrips, python, java, etc
4	A test is a document with instruction on testing the specific functionality of an application	Test script is a program that runs various test date on the functionality of an application
5	Test scenario serve as an outline for writing test cases	Test case serves as an outline for writing test scripts

Q.33 What is priority?

Ans. What is Priority in Testing? One can define Priority as a parameter for deciding the order in which one can fix the defect. In this, the defect with a higher priority first needs to get fixed. Priority basically defines the order in which one would resolve any given defect.

Q.34 What is severity?

Ans. What is Severity in Testing? One can define Severity as the extent to which any given defect can affect/ impact a particular software. Severity is basically a parameter that denotes the impact of any defect and its implication on a software's functionality.

Q.35 What are the different Methodologies in Agile Development Model?

Ans. 1) Kanban. ...
2) Scrum. ...
3) Extreme Programming (XP) ...
4) Crystal. ...
5) Dynamic Systems Development Method (DSDM) ...
6) Feature-Driven Development (FDD)