**Software Testing Assignment Module-2**

**1- What is Error, Defect, Bug and failure?**

**a.** 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**.

**2- What is the purpose of exit criteria?**

**a.** **Exit Criteria :** Exit criteria define when to stop testing – either at the end of all testing or a test phase.

It is based on:

* Test coverage (requirements, code, risks)
* Defect levels (e.g., open defects by severity)
* Cost and schedule
* Remaining risks (like untested areas or unfixed bugs)

**3- Difference between QA v/s QC v/s Tester**

**a.**

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| **S.N.** | **Quality Assurance (QA)** | **Quality Control (QC)** | **Testing** |
| 1 | Ensures proper process and standards are followed | Checks if software meets requirements | Finds bugs or defects in the software |
| 2 | Focuses on process and planning | Focuses on executing tests to find issues | Involves actual testing |
| 3 | Process-oriented | Product-oriented | Product-oriented |
| 4 | Prevents defects | Fixes defects | Helps prevent future defects |
| 5 | Part of the Software Testing Life Cycle (STLC) | Subset of QA | Subset of QC |

**4- What is Exploratory Testing?**

**a.** This may be the only type of technique used for low-risk systems, but this approach may be particularly useful under extreme time pressure – in fact this is one of the factors leading to exploratory testing.

**5- What is traceability matrix?**

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

**6- What is Boundary value testing?**

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

**7- What is Equivalence partitioning testing?**

**a.** Aim is to treat groups of inputs as equivalent and to select one representative input to test them all EP can be used for all Levels of Testing.

**8- What is Integration testing?**

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

**9- What is component testing?**

**a.** A minimal software item that can be tested in isolation. It means “Aunit is the smallest testable part of software.

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

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

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

**a.** 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 Adhoc testing?**

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

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

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

* Statement coverage
* Decision coverage
* Condition coverage

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

**a. 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
* Other Black Box Testing
* Syntax or Pattern Testing

**15- What is GUI Testing?**

**a- 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.

**16- Difference between Smoke and Sanity?**

**a-**

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| **S.N** | **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 | This testing is performed by the developers or testers | Sanity testing is usually performed by testers |
| 3 | Smoke testing is usually documented or scripted | Sanity testing is usually not documented and unscripted |
| 4 | Smoke testing is a subset of Regression testing | Sanity testing is a subset of Acceptance testing |
| 5 | Smoke testing is like General Health Check Up | Sanity Testing is like specialized health check up |

**17- What determines the level of risk?**

**a.** A factor could result in future negative consequences, usually expressed as impact and likelihood.

2 types of risk

1. Project risk
2. Product risks

**18- What is Alpha testing?**

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

**19- What is beta testing?**

**a.** Beta Testing is always performed at the time when software product and project are marketed.

**20- What is load testing?**

**a.** Its a performance testing to check system behave or 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.

**21- What is stress Testing?**

**a.** Stress Testing is done to make sure that the system would not crash under crunch situations.

**22- Mention what are the categories of defects?**

**a.**

1. Data quality /Database Defects
2. Critical Functionality Defects
3. Functionality Defects
4. Security Defects
5. User Interface Defects

**23- Mention what big bang testing is?**

**a.** Big Bang testing has the advantage that everything is finished before integration testing starts.

**24- When should "Regression Testing" be performed?**

**a.** Regression testing means testing your software application when it undergoes a code change to ensure that the new code has not affected other parts of the software.

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

**a.**

1. Load testing
2. Stress testing
3. Endurance testing
4. Spike testing
5. Volume testing
6. Scalability testing

**26- Difference between Priority and Severity**

**a.**

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| **Sr.no** | **Priority** | **Severity** |
| **1** | How urgent is to fix the defect | How serious the impact of a defect is on functionality or performance |
| **2** | Business urgency or importance | Technical impact of the bug |
| **3** | Development or release timeline | Stability, functionality, or performance |
| **4** | Typo on homepage of a major site high priority | May not be fixed immediately if priority is low |

**27- What is Bug Life Cycle?**

**a.** 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.

**28- Explain the difference between Functional testing and Non-Functional testing**

**a.**

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| **Functional Testing** | **Non-Functional Testing** |
| Easy to do manual testing | Tough to do manual testing |
| Functional testing is executed first | Non functional testing should be performed after functional testing |
| Manual testing or automation tools can be used for functional testing | Using tools will be effective for this testing |
| Business requirements are the inputs to functional testing | Performance parameters like speed , scalability are inputs to non-functional testing. |
| Types of Functional testing   * Unit Testing * Smoke Testing * Sanity Testing * Integration Testing * White box testing * Black Box testing | Types of Nonfunctional testing   * Performance Testing * Load Testing * Volume Testing * Stress Testing * Security Testing * Installation Testing |

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

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| **Aspect** | **SDLC (Software Development Life Cycle)** | **STLC (Software Testing Life Cycle)** |
| **Definition** | SDLC is a structure imposed on the development of a software product that defines the process for planning, implementation, testing, documentation, deployment, and ongoing maintenance and support. There are a number of different development models. | STLC is a series of specific steps followed to ensure that software meets the expected quality standards. |
| **Purpose** | To build software that meets user requirements. | To verify and validate the software product through structured testing. |
| **Focus** | Entire software development process (requirements, design, coding, testing, deployment, maintenance). | Testing activities only (planning, designing, executing test cases, reporting bugs). |
| **Phases** | 1. Requirement Gathering 2. System Design 3. Implementation / Coding 4. Testing (basic) 5. Deployment 6. Maintenance | 1. Requirement Analysis 2. Test Planning 3. Test Case Design 4. Test Environment Setup 5. Test Execution 6. Closure |

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

**a.**

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| **Aspect** | **Test Scenario** | **Test Case** | **Test Script** |
| **Definition** | A high-level situation or functionality to be tested. | A detailed document specifying steps, data, and expected results to validate a scenario. | A set of executable instructions (manual or automated) to perform the test case. |
| **Purpose** | To identify what to test. | To define how to test the scenario in detail. | To execute the test case, either manually or using automation. |
| **Detail Level** | Low-level (broad overview). | High-level (step-by-step, includes test data and expected result). | Execution-level (instructions or code). |
| **Components** | Title or description only. | Test ID, description, steps, input, expected result, preconditions. | Manual steps or automation code/script. |
| **Example** | Verify login functionality with valid and invalid credentials. | 1. Open login page 2. Enter username and password 3. Click login Expected: Home page | Selenium script to input credentials and verify login success. |

**31- Explain what Test Plan is? What is the information that should be covered**

**a.**

* A document describing scope, approach, resource, and schedule intended test activities.
* Define what will be tested and how it will be tested.
* Provide a clear roadmap for testing activities.
* Align testing objectives with project goals.
* Identify risks, resources, and responsibilities.
* Ensure stakeholder visibility into the testing process.

**32- Difference between verification and Validation**

**a-**

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| **Criteria** | **Verification** | **Validation** |
| **Definition** | The process of evaluating work-products 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 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. |
| **Evaluation Items** | Plans, Requirement Specs, Design Specs, Code, Test Cases | The actual product/software. |
| **Activities** | * Reviews * Walkthroughs * Inspections | * Testing |

**33- What is priority?**

**a.** Priority in testing refers to the level of urgency assigned to a defect or test case, indicating how quickly it should be fixed or executed based on its impact on the business or project timelines.

**34- What is severity?**

**a.** Severity is a measure of how badly a defect affects the system's functionality or performance, as determined by the tester or developer.

**35- Bug categories are…**

**a.** Bug Category is Security, Database, Functionality (Critical/General), UI

**36- Advantage of Bugzilla.**

**a.** Bugzilla is an open-source issue/bug tracking system that allows developers effectively to keep track of outstanding problems with their product. It is written in Perl and uses MYSQL database.

**37- What are the different Methodologies in Agile Development Model?**

**a.**

* **Scrum-** SCRUM is an agile development method which concentrates particularly on how to manage tasks within a team-based development environment.
* **Kanban-** Kanban is a very popular framework for development in the agile software development methodology.

**38- Explain the difference between Authorization and Authentication in Web testing. What are the common problems faced in Web testing?**

**a.**

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| **Sr.no** | **Authorization** | **Authentication** |
| **1** | The process of verifying the identity of a user | The process of checking user permissions |
| **2** | o ensure only valid users can log in | To ensure users only access permitted resources |
| **3** | Happens before authorization | Happens after successful authentication |
| **4** | User enters username and password to log in | Logged-in user tries to access admin panel; access is restricted based on role |
| **5** | Test login pages, session handling, password policies | Test role-based access, URL restrictions, permission boundaries |

**Common problems: -**

1. Security Issues
2. Compatibility Issues
3. Functionality Issues
4. Performance Issues
5. Usability Issues
6. Data Integrity Issues
7. Navigation Issues