**Manual Testing**

1)Why testing is required?

Ans: Testing is always needed for correctly understand the fault errors in software during its development phase. It is necessary because it always ensures the users or customers satisfaction and reliability of the application. It is needed in software development to increase the reliability and quality of the software .Testing is needed to provide the various facilities to the users like delivery of high quality software or application, lower maintenance costs and more accurate and reliable results also Testing is necessary because of effective optimum performance of system and capacity utilization, software reliability, quality, and system or application assurance.

2)what is SDLC and different phases in SDLC?

Ans: SDLC is the process consisting of a series of planned activities to develop or alter the software products.  The life cycle defines a methodology for improving the quality of software and the overall development process.

3.what is waterfall method

Ans: Waterfall approach was first SDLC Model to be used widely in Software Engineering to ensure success of the project. In "The Waterfall" approach, the whole process of software development is divided into separate phases. In Waterfall model, typically, the outcome of one phase acts as the input for the next phase sequentially.

**Requirement Gathering and analysis:** The system to be developed are captured in this phase and documented in a requirement specification document.

**System Design:** The requirement specifications from first phase are studied in this phase and system design is prepared. System Design helps in specifying hardware and system requirements and also helps in defining overall system architecture.

**Implementation:** With inputs from system design, the system is first developed in small programs called units, which are integrated in the next phase. Each unit is developed and tested for its functionality which is referred to as Unit Testing.

**Integration and Testing:** All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures.

**Deployment of system:** Once the functional and non functional testing is done, the product is deployed in the customer environment or released into the market.

**Maintenance:** There are some issues which come up in the client environment. To fix those issues patches are released. Also to enhance the product some better versions are released. Maintenance is done to deliver these changes in the customer environment.

4) what is agile method

Ans: Agile is a software development methodology to build a software incrementally using short iterations of 1 to 4 weeks so that the development is aligned with the changing business needs.

5) what is scrum methodology

Ans: Scrum is an efficient framework within which you can develop software with teamwork. It is based on agile principles.

6) what is the process in agile model

Ans: Agile model believes that every project needs to be handled differently and the existing methods need to be tailored to best suit the project requirements. In agile the tasks are divided to time boxes (small time frames) to deliver specific features for a release.

Iterative approach is taken and working software build is delivered after each iteration. Each build is incremental in terms of features; the final build holds all the features required by the customer.

Agile thought process had started early in the software development and started becoming popular with time due to its flexibility and adaptability.

**Individuals and interactions** - in agile development, self-organization and motivation are important, as are interactions like co-location and pair programming.

**Working software** - Demo working software is considered the best means of communication with the customer to understand their requirement, instead of just depending on documentation.

**Customer collaboration** - As the requirements cannot be gathered completely in the beginning of the project due to various factors, continuous customer interaction is very important to get proper product requirements.

**Responding to change** - agile development is focused on quick responses to change and continuous development.

7) what is daily standup meeting and what we discuss

Ans: A daily stand-up meeting is a short organizational meeting that is held each day. The meeting, generally limited to between five and fifteen minutes long, is sometimes referred to as a stand-up, a morning roll-call or a daily scrum.

8) what is product back log items

Ans: **Product Backlog Item**. In Scrum, a **product backlog item** is a unit of work small enough to be completed by a team in one Sprint iteration. **Backlog items** are decomposed into one or more tasks.

9) what is sprint planing meeting

Ans: The sprint planning meeting is attended by the product owner, ScrumMaster and the entire Scrum team. Outside stakeholders may attend by invitation of the team, although this is rare in most companies. During, the sprint planning meeting, the product owner describes the highest priority features to the team. The team asks enough questions that they can turn a high-level user story of the product backlog into the more detailed tasks of the sprint backlog.

10) what is sprint review meeting

Ans: In Scrum, each **sprint** is required to deliver a potentially shippable product increment. This means that at the end of each **sprint**, the team has produced a coded, tested and usable piece of software. So at the end of each **sprint**, a **sprint review meeting** is held.

11) what is sprint retrospective

Ans: The **sprint retrospective** is a continuous improvement opportunity for a **Scrum** team to review its process (approaches to performing **Scrum**) and to identify opportunities to improve it. See also inspect and adapt.

13) what is burndown chart and velocity

Ans: The Scrum Burndown Chart is a visual measurement tool that shows the completed work per day against the projected rate of completion for the current project release. Its purpose is to enable that the project is on the track to deliver the expected solution within the desired schedule.

The rate of progress of a Scrum Team is called "velocity". It expresses the amount of e.g. story points completed per iteration. An import rule for calculating the velocity is that only stories that are completed at the end of the iteration are counted

14) what is user acceptance criteria test cases

Ans: User acceptance testing (UAT) is the last phase of the software testing process. During UAT, actual software users test the software to make sure it can handle required tasks in real-world scenarios, according to specifications. UAT is one of the final and critical software project procedures that must occur before newly developed software is rolled out to the market.

15) what is v model?

Ans:The **V** - **model** is SDLC **model** where execution of processes happens in a sequential manner in **V**-shape. It is also known as Verification and Validation**model**. **V** - **Model** is an extension of the waterfall**model** and is based on association of a testing phase for each corresponding development stage.

16) what is STLC?

Ans: The **process** of testing a software in a well planned and systematic way is known as **software testing life cycle**(**STLC**). Requirements gathering Requirements Analysis is done is this phase, software requirements are reviewed by test team. Design Test Planning, Test analysis and Test design is done in this phase.

17) what is defect?

Ans: A programmer while designing and building the **software** can make mistakes or error. These mistakes or errors mean that there are flaws in the **software**. These are called **defects**. When actual result deviates from the expected result while **testing** a**software** application or product then it results into a **defect**

**18)** **how to arise a defect and what we specify while logging defect?**

**Ans:** Defect logging, a process of finding defects in the application under test or product by testing or recording feedback from customers and making new versions of the product that fix the defects or the clients feedback.Defect tracking is an important process in software engineering as Complex and business critical systems have hundreds of defects. One of the challenging factors is Managing, evaluating and prioritizing these defects. The number of defects gets multiplied over a period of time and to effectively manage them, defect tracking system is used to make the job easier.

**19)** **defect lifecycle**

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

**20)** **What is unit testing?**

**Ans: Unit testing** is a software **testing** method by which individual units of source code, such as functions, methods, and class are tested to determine whether they are fit for use. Intuitively, one can view a **unit** as the smallest testable part of an application.

**21)** **when do we use regression testing?**

**Ans:** Regression testing a black box testing technique that consists of re-executing those tests that are impacted by the code changes. These tests should be executed as often as possible throughout the software development life cycle.

**22)** What is integration testing?

**Ans: Integration testing** (sometimes called **integration** and **testing**, abbreviated I&T) is the phase in **software testing** in which individual **software** modules are combined and **tested** as a group. It occurs after unit **testing** and before validation **testing**.

23) when do we use integration testing?

Ans: There are two major ways of carrying out an integration test, called the bottom-up method and the top-down method. Bottom-up integration testing begins with unit testing, followed by tests of of progressively higher-level combinations of units called modules or builds. In top-down integration testing, the highest-level modules are tested first and progressively lower-level modules are tested after that. In a comprehensive software development environment, bottom-up testing is usually done first, followed by top-down testing. The process concludes with multiple tests of the complete application, preferably in scenarios designed to mimic those it will encounter in customers' computers, systems and networks.

24) when do we use smoke testing and sanity testing?

Ans: Smoke Testing is a kind of Software Testing performed after software build to ascertain that the critical functionalities of the program is working fine. It is executed "before" any detailed functional or regression tests are executed on the software build. The purpose is to reject a badly broken application, so that the QA team does not waste time installing and testing the software application.In Smoke Testing, the test cases chosen cover the most important functionality or component of the system. The objective is not to perform exhaustive testing, but to verify that the critical functionalities of the system is working fine.

Sanity testing is a kind of Software Testing performed after receiving a software build, with minor changes in code, or functionality, to ascertain that the bugs have been fixed and no further issues are introduced due to these changes. The goal is to determine that the proposed functionality works roughly as expected. If sanity test fails, the build is rejected to save the time and costs involved in a more rigorous testing

25) what is unit testing?

Ans: **Unit testing** is a software **testing** method by which individual units of source code, such as functions, methods, and class are tested to determine whether they are fit for use. Intuitively, one can view a **unit** as the smallest testable part of an application.

26) what is UAT?

Ans: In software development, user acceptance testing (UAT) - also called **beta** testing,**application** testing, and end user testing - is a phase of software development in which the software is tested in the "real world" by the intended audience.

27) what is alpha and beta testing

Ans: Alpha testing performed by Testers  who are usually internal employees of the organization. Alpha Testing performed at developer's site

Beta testing is performed by Clients or End Users who are not employees of the organization. Beta testing is performed at client location or end user of the product

28) when do we use white box testing and block box testing?

Ans: White box testing is a testing technique, that examines the program structure and derives test data from the program logic/code. The other names of glass box testing are clear box testing, open box testing, logic driven testing or path driven testing or structural testing.

Black-box testing is a method of software testing that examines the functionality of an application based on the specifications. It is also known as Specifications based testing. Independent Testing Team usually performs this type of testing during the software testing life cycle.

31) when do we use automation testing?

Ans: Test engineers strive to catch them before the product is released but they always creep in and they often reappear, even with the best manual **testing processes**. Test Automation software is the best way to increase the effectiveness, efficiency and coverage of your software testing

32) what tester will do in each phase of SDLC?

Ans: Requirements gathering and Analysis:All types of estimation and examination of user needs are done in this phase.

System Design:In the second phase a basic system planning is done. After collecting the all statistics and data, a system design is done.

Implementation:In the next phase implementation of project is done. Respect to the system design, correct development is made to expand that design. According to the project programming language will be chosen.

System Testing:After the implementation phase, system testing phase take place to recognize the result of application. Testing is done to recognize the original result and the predictable result.

Operation Maintenance:It is the ultimate phase of SDLC, where the application which is implemented is spread to users who are answerable for conserving and using it for appropriate actions. The implemented application should be available for any adjustment.

33) difference between load and performance testing?

Ans: Performance testing, a non-functional testing technique performed to determine the system parameters in terms of responsiveness and stability under various workload. Performance testing measures the quality attributes of the system, such as scalability, reliability and resource usage..

Load testing is performance testing technique using which the response of the system is measured under various load conditions. The load testing is performed for normal and peak load conditions.

34) different types of non-functional testing types?

Ans: Non-Functional testing is a software testing technique that verifies the attributes of the system such as memory leaks, performance or robustness of the system. Non-Functional testing is performed at all test levels.

Baseline testing

Compatibility testing

Compliance testing

Endurance testing

Load testing

Localization testing

Internationalization testing

Performance testing

Recovery testing

Resilience testing

Security testing

Scalability testing

Stress testing

35) what is test case?

Ans: A **test case** is a document, which has a set of **test** data, preconditions, expected results and postconditions, developed for a particular **test** scenario in order to verify compliance against a specific requirement.

36) what is test planning/test strategy document

Ans: Test planning, the most important activity to ensure that there is initially a list of tasks and milestones in a baseline plan to track the progress of the project. It also defines the size of the test effort.It is the main document often called as master test plan or a project test plan and usually developed during the early phase of the project.

Test Strategy is also known as test approach defines how testing would be carried out. Test approach has two techniques:

**Proactive -**An approach in which the test design process is initiated as early as possible in order to find and fix the defects before the build is created.

**Reactive -**An approach in which the testing is not started until after design and coding are completed

37) what is Exit and Entry criteria

Ans: Entry criterion is used to determine when a given test activity should start. It also includes the beginning of a level of testing, when test design or when test execution is ready to start.

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.

38) what is TDD and BDD (cucumber framework)

Ans: **Cucumber** is a testing tool that supports **Behavior Driven Development** (**BDD**)**framework**. It defines application behavior using simple English text, defined by a language called Gherkin. **Cucumber** allows automation functional validation that is easily read and understood.

TDD is a Software Development methodology in which first test cases are written in the form of stories and then allowed to fail. Then the developers write code to pass the testcases and thus implementing the story or requirement.

39) how do we write test cases in BDD format

Ans: Behavior-driven development should be focused on the business behaviors your code is implementing: the “why” behind the code. It supports a team-centric (especially cross-functional) workflow. I’ve seen agile BDD work really well when a developer and either the Agile product owner or a business analyst sit down together and write pending specs (to be filled in later by the developer) in a plain text editor:

The business person specifies behaviors they want to see in the system.

The developer asks questions based on their understanding of the system, while also writing down additional behaviors needed from a development perspective.

40) what is priority and severity in defect?

Ans: **Defect Priority** (Bug Priority) indicates the importance or urgency of fixing a defect. Though priority may be initially set by the Software Tester, it is usually finalized by the Project/Product Manager.

**Defect Severity** or Impact is a classification of **software defect** (bug) to indicate the degree of negative impact on the quality of **software**. ISTQB Definition. **severity**: The degree of impact that a **defect** has on the development or operation of a component or system.

**41)** **how to estimate test cases?**

**Ans:** In order to be a successful in estimating, the software test project and proper execution are significant as the software development life cycle. Software testing estimation techniques play a very important role in making the good reputation with the client while bidding the project for testing.One of the most important factors while estimating testing efforts is the experience on varied projects for the software test life cycle. Apparently one cannot just put some number of days for any task or taking the old time formula of one third of the development effort. This is one of the most widely used estimation technique by the companies offering software testing services. It is merely due to the fact that this method is not based on any scientific principle or technique

42) what are test design techniques

Ans:  **Test Design** is creating a set of inputs for given software that will provide a set of expected outputs. ... Broadly speaking there are two main categories of **Test Design Techniques**.

43) if we dont have time to test call test cases what we will do

Ans: If we have enough time to test the application then it is not a problem at all. But if there isn’t enough time for through testing of application, in this situation it won’t possible to test each & every combination of scenario. The Risk analysis is playing vital role in Software Testing, we recommend that you should use risk analysis to determine where testing should be focused.

44) how we learn the functionality of system?

Ans: It provides a platform (hardware abstraction layer) to run high-level **system software**and application **software**. ... Device drivers, including also computer BIOS and device firmware, provide basic **functionality** to operate and control the hardware connected to or built into the computer.

46) what is requirement traceability matrix

Ans: Requirements tracing, a process of documenting the links between the requirements and the work products developed to implement and verify those requirements. The RTM captures all requirements and their traceability in a single document delivered at the conclusion of the life cycle.

47) what are typical environments we have in projects

Ans: typical set of software you need for everyday \*manual\* testing tasks? We could include these in our deployment so that user could save more time for testing, not for environment prep & tuning.

48) what is development environment

Ans: In computer program and **software** product **development**, the **development environment** is the set of processes and programming tools used to create the program or **software** product. The term may sometimes also imply the physical**environment**.

49) what is QA environment

Ans: Development, Test, **QA**, and Production **Environments**. A **QA environment** is where you test your upgrade procedure against data, hardware, and software that closely simulate the Production **environment** and where you allow intended users to test the resulting Wave set application.

50) What is staging environment

Ans: A stage or **staging environment** is an **environment** for **testing** that exactly resembles the production **environment**. In other words, it's a complete but independent copy of the production **environment**, including the database. **Staging** provides a true basis for QA **testing** because it precisely reproduces what is in production

51) what is production environment

Ans: **Production environment** is a term used mostly by developers to describe the setting where software and other products are actually put into operation for their intended uses by end users.

52) how to deal the production defects?

Ans: major responsibilities were performing function testing, executing regression suites, running smoke tests etc.

53) Types of testing?

**Ans:**

**Black box testing** – Internal system design is not considered in this type of testing. Tests are based on requirements and functionality.

**White box testing** – This testing is based on knowledge of the internal logic of an application’s code. Also known as Glass box Testing. Internal software and code working should be known for this type of testing. Tests are based on coverage of code statements, branches, paths, conditions.

**Unit testing** – Testing of individual software components or modules. Typically done by the programmer and not by testers, as it requires detailed knowledge of the internal program design and code. may require developing test driver modules or test harnesses.

**Incremental integration testing** – Bottom up approach for testing i.e continuous testing of an application as new functionality is added; Application functionality and modules should be independent enough to test separately. done by programmers or by testers.

**Integration testing** – Testing of integrated modules to verify combined functionality after integration. Modules are typically code modules, individual applications, client and server applications on a network, etc. This type of testing is especially relevant to client/server and distributed systems.

**Functional testing** – This type of testing ignores the internal parts and focus on the output is as per requirement or not. Black-box type testing geared to functional requirements of an application.

**System testing** – Entire system is tested as per the requirements. Black-box type testing that is based on overall requirements specifications, covers all combined parts of a system.

**End-to-end testing** – Similar to system testing, involves testing of a complete application environment in a situation that mimics real-world use, such as interacting with a database, using network communications, or interacting with other hardware, applications, or systems if appropriate.

**Sanity testing**– Testing to determine if a new software version is performing well enough to accept it for a major testing effort. If application is crashing for initial use then system is not stable enough for further testing and build or application is assigned to fix.

**Regression testing** – Testing the application as a whole for the modification in any module or functionality. Difficult to cover all the system in regression testing so typically automation tools are used for these testing types.

**Acceptance testing** -Normally this type of testing is done to verify if system meets the customer specified requirements. User or customer do this testing to determine whether to accept application.

**Load testing** – Its 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.