

Software Testing Interview Questions

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Software Testing Interview Questions:

1. Define Software Testing?

Software testing is the process of executing build software with the intention of finding errors or bugs.

Software Testing is perform by Tester or Quality analyst to ensure product quality.

2. What is Test cases?

Test cases are the set of conditions under which tester will check your build software.

To determine whether build software or its features is working as per the purpose of its development.

3. What are the main Objectives of Software Testing?

Following are the objectives of Software testing:

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- To ensure that built software meets the business and client requirement.
- It determines errors and vulnerabilities that can cause severe implications to the client.
- It ensure that System/Software is ready to use.
- Software testing a form of Quality analysis that helps in gaining client faith in your organization.
- It helps in evaluating the capabilities of a system.

4. Describe the Principles of Software testing?

Following are the Principles :

1. All test cases should be traceable to customers requirements.

It means that our testing parameters should cover customers needs and requirements.

2. Test should be plan long before actual testing begins.

As soon as our software development starts, on the other side test planning must also start.

3. Testing should begin in small and progress towards testing in large.

In the early phases of testing, tester focuses on testing small units or modules of the software. As testing advances tester focus shifts towards testing whole software or sets of integrated modules.

4. Exhaustive Testing is not possible.

One thing about software development is that, it very complex Process. It can have millions of lines of code so testing each and every line of code will not be possible in any case. Only most important functionalities are tested aggressively.

5. To be most effective, Testing should be conduct by an independent third party(company).

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There are several IT companies in markets whose specialization lies in Testing domain. So we can hire these companies to test our build product. In this way deliverables will be achieved on time.

5. Enlist the types of Testings?

1. Unit Testing.
2. Integration Testing.
 - a.Incremental Integration Testing.
 - Top-down Integration.
 - Bottom-Up Integration.
 - b.Non-Incremental Integration Testing
3. Regression Testing.
4. Smoke Testing
5. Alpha Testing
6. Beta Testing.
7. System Testing
 - Recovery Testing.
 - Security Testing,
 - Stress Testing.
 - Performance Testing.
8. White Box Testing.
9. Black Box Testing
10. Verification Testing
11. Validation Testing.
12. Usability Testing
13. Acceptance Testing.

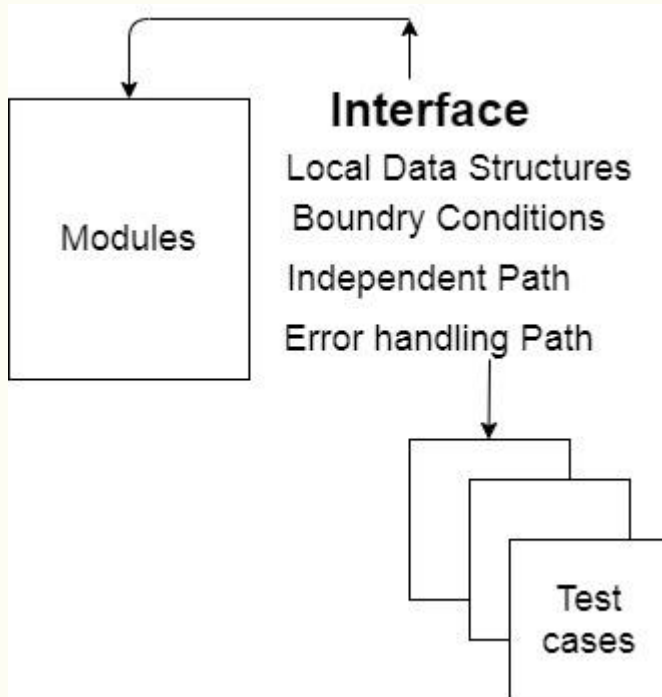
6. Explain Unit Testing?

As the name suggests, In-unit Testing Tester tends to test a single unit of software called Module. The purpose of Unit testing is to validate that each unit of software perform the functions as designed.

The Unit Test is **White Box Test**. It's focus is to uncover errors in design and implementation including:

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- Data structures in a component.
- Program logic.
- Component Interface.
- Reduces number test cases.
- Functions and operations of a component.



Targets For Unit Test Cases:

1. Module Interface:

- Ensure that information flows properly into and out of the module.

2. local data Structures:

- It Ensures data stored temporarily maintains its integrity during all steps in an algorithm execution.

3. Boundary Condition:

- Ensures that the modules operate properly at boundary value establish to limit or restrict processing.

4. Independent Path:

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- Independent paths are exercise to ensure that all statements in a module executes at least once.

5. Error Handling Path:

- It ensures that the algorithm responds correctly to specific error conditions.

7. Explain Integration Testing?

It is a systematic technique for constructing the software architecture. In this testing we integrate two or more software modules and test them as a whole.

The focus is to uncover errors in:

- Design and construction of software architecture.
- Integrated function or operations at sub-system level.

There are two types of Integration Testing:

- Non-Incremental Integration Testing.
- Incremental Integration Testing.

8. Explain Non-Incremental Integration Testing?

This is commonly called a “big bang” approach. In this approach all components(modules/units) are combined in advance and the entire program tested as a whole.

This process leads to cause unknown errors. Because we combine untested component in advance.

Once we correct sets of errors, more errors can occur and testing appears to enter in an endless loop.

9. Explain Incremental Integration Testing?

In this type of Integration testing, We make and test programs in small increments. Due to this strategy finding an error and correcting it become easy.

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Errors are easy to isolate and correct. There are two types of Incremental Integration Testing:-

- Top-down Integration.
- Bottom-up Integration.

10. Difference between Top-down and bottom-up Integration testing?

Top-down Integration	Bottom-Up Integration
This is an incremental approach for constructing software architecture.	Bottom-up integration starts by sub-modules checking.
Modules are integrated by moving downward in control hierarchy.	Low-level components are combined into clusters.
Drivers are not required for test cases, Instead, stub are used.	Drivers are required.
It is used to design a brand new System.	It is sometimes used in reverse Engineering.
We incorporate modules either in depth-first or breadth-first fashion.	We partition clusters vertically or horizontally.

11. What is Regression testing Explain it?

During a Software development phase each addition or deletion of new code line may change previous flawless functionality of software.

Therefore regression Testing re-executes a small subsets of test which is already conducted, to ensure no errors.

It ensures that changes have not propagated unintended side effects.

Helps to ensure that changes do not introduce additional errors.

There are mostly two strategies to regression testing.

1. to run all test cases.

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2. always run the subset of the test on the basis of test case prioritization technique.

12. When we perform regression testing?

Whenever we want to check that features of software working fine earlier are presently working fine or not.

13. Explain Smoke Testing?

Smoke testing is a type of testing that determines whether the built software is stable or not. The purpose of this testing is to reject badly broken applications. So that the Q&A team doesn't waste time in installing and testing software applications.

It is kind of mini rapid regression testing which help to find that product is ready for testing.

14. Explain Smoke testing with an example?

Suppose consider the example of an online chat application, it will have modules like login page, sign up page, user profile page, setting page, etc. So here the developer will check whether a valid user creates an account, after creating an account he is able to see his profile.

So smoke testing is always perform by developer end, before submitting the actual build to the testing team.

15. What are the benefits of Smoke testing?

Here the benefits of smoke testing:

- Minimizes Integration Risk.
- The quality of the end-product gets improve.
- It simplifies error diagnosis and correction.
- Progress get easier to access.

16. Explain Alpha testing?

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We conduct Alpha Testing at the developer's site by end-user(client). client will be using software and the developer will watch for any kind of errors. It is always occurs in controlled environment.

17. Explain beta testing?

Beta Testing comes after Alpha testing. It is a form of external user acceptance testing. For example in google play we see lots of applications come under the beta version. In this testing developer allow end-users to download software. With the feedback of end-users developers will fix the errors and bugs if any.

After bugs from beta version of software is solved developer can release stable version of software.

18. Difference between Alpha and Beta Testing?

Alpha Testing	Beta Testing
It is always performed by the developer at the software development site.	It is always performed by the customer at their own site.
Alpha testing is not open to the market and public	Beta testing is open to market and public.
It comes under the category of white box and black box testing.	It comes under the category of black-box testing.
Developer records errors and provide solutions.	Users records problems occurred and submit as a feedback to the developer.
Less Numbers of errors are solved.	More Numbers of errors are solved.

19. Explain System Testing and enlist its types?

It is a types of testing in which system as a whole is tested. The main objective of this test is to find the compatibility of produced software.

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For example when you download any software online there, it is written like: minimum requirement is Intel Pentium processor, 1 GB Ram, and so on.

This requirements are gathered from system testing. It is type of black box testing.

Types of System Testing are:

- Recovery Testing.
- Security Testing.
- Stress Testing.
- Performance Testing.

20. Explain Recovery Testing?

Recovery testing is used to tests for recovery from system faults. In this process tester forces the software to fail in variety of ways and verifies that system recovers from failure within a specified time period.

Tests re-initialization, checkpointing mechanism, data recovery, and restart for correctness.

Example- Printer disconnects, System hang?

21. Explain Security Testing?

Security Testing verifies that protection mechanisms built into a system will, In fact protect it from improper access.

During security testing, the tester plays the roles of individual who desire to penetrate the system.

The tester may attempt to:

- Try to acquire a password through clerical means.
- May attack system with custom software specially designed to attack the system.
- May overwhelm the system thereby denying the services of other services.

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- Try to find key to system entry.

For example: Let us consider a chat application, you have your login and password with the help of your credentials you can login into the system. But what about any other can also able to access you account? this the breach of security and your privacy, Therefore security of built system is tested aggressively.

22. Explain Stress Testing?

Stress testing is the testing in which tester try to find breaking point of the system.

In this tester executes system in such a manner that demands resources in abnormal quantity, frequency, or volume e.g: suppose if the system is capable of handling 50 users at a time tester will try to test it with 51 users at a time.

23. What is Performance Testing?

Performance testing is designed to test the run-time performance of the software within the context of an integrated system.

It can uncover situations that can leads to the degradation and possible system failure.

let us consider an example of an online E-commerce site where millions of people visit in a day, but what will happen if their site is loading slowly? company will lose their customer and profits. In this website fast loading is the performance criteria, So therefore performance of a system matters a lot.

24. What is White Box Testing?

White box testing is also called as glass-box testing, it is a type of testing which always performed by the developer team, mean only professionals can perform it.

In this type of testing tester know the internal code and structure of the software.

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This testing ensure that system perform the function for which it is designed. It can uncovers errors in “**hidden code**”.

25. What is Black Box Testing?

Black box testing is called as behavioral testing. Black box testing treats the software as a “black-box” where tester are only aware of what the software is suppose to do, not how it does.

It testing is done by the professional testing team. It doesn't require knowledge of the internal coding of the application.

26. Difference between Black Box and White Box Testing?

Sr.No	Criteria	Black Box Testing	White Box Testing
1.	Definition	Black Box Testing is a testing method in which the internal structure, design, implementation of software being tested is not known to the tester.	White Box Testing is a testing method in which the internal structure, design, implementation of software being tested is not known to the tester.
2.	Applicable to	Applicable to the highly level of testing, acceptance testing or System testing.	lower level of testing like- Unit or integration testing.
3.	Programming Knowledge	Not Required.	Required.
4.	Performed by	Software Tester.	Software developer.

27. Explain Verification Testing?

Verification Testing is the set of activities that ensure that built software correctly implements a specific function or algorithm.

28. Explain Validation Testing?

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Validation Testing is the set of activities that software build is traceable to customer needs and requirement.

Whatever customer demands for software it must meet that criteria.

29 Difference Between Verification and Validation Testing?

Verification Testing	Validation Testing
The set of activities that ensures that software correctly meets specific function or algorithm.	The set of activities that ensures that the software build is traceable to customer needs and requirements.
It is static process of verifying documents, code, design etc.	It is a dynamic mechanism of validating and testing the actual product.
This Testing does not involves executing of code.	This Testing involves executing of code.
Verification uses methods like inspection, reviews, walkthroughs etc.	Validation uses methods like black box and white box testing.
It is a low level exercise.	It is a high level.

30. Explain Usability Testing?

In this testing end- users for which software is made are allowed to check how easy to use system is.

For example consider the example of Noteshacker, if this site will not have menu or navigation will it be easy for end-users to learn something from this kind of site. answer will be no, therefore User interface is necessary to gain user confidence.

31. What is Acceptance Testing?

Acceptance testing is the testing in which our build product is tested for acceptability. the purpose of this testing to see the system compliance

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with the business requirement and check whether it is acceptable for delivery.

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