

# Software Quality Assurance Engineer Interview Questions And Answers Guide.



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# Software Quality Assurance Engineer Job Interview Preparation Guide.

## Question # 1

What are various role and responsibilities of organization SQA?

### Answer:-

There are some interesting challenges for SQA role & activities in my organization. This is with reference to Software Industry.

Basically there is at a gross level lack of compliance to Quality Management system (This is more to do with a mindset issue & ego, high esteem perspective, I can delivery without QMS)

Even the people in escalation path just listen, but do not take much action.

SQA is supposed to co-ordinate reviews (tech and management) However the fact is that practitioners preciously know when a review is required as they have higher and bigger stake in the project and they do it exactly when required irrespective of what SQA says. SQA is then merely a coordinator.

If SQA recommends a practice, no one follows (even though it is understood that SQA is a customer advocate), when the same thing is asked by customer, without fail everyone follows!

I find something wrong with the way SQA Roles/Responsibilities are defined & implemented in the organization I work with.

In one of the CMM Books I came across a Disadvantage of SQA concept that was indicative of organizations would not want to assign their best technical talent into such roles.

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## Question # 2

What is difference between get and post method in load runner or it same as the concept in html form?

### Answer:-

GET method is mainly used when the client requests are made to the server. This is like a query made to the server.

POST method is used to submit a set of data to the server.

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## Question # 3

Explain Test Strategy for Middleware and Firmware?

### Answer:-

We have defined middleware and firmware and understand that they are different, yet have many characteristics in common when it comes to testing. The discussion of test strategy for these types of software will include both middleware and firmware, and can be extended to test any software which is not accessed by a user interface.

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## Question # 4

Explain Early Testing?

### Answer:-

Early testing will multiply the testing effectiveness of any software application, regardless of technology. However, in the world of middleware and firmware early testing is most critical because finding defects at later stages carries a higher penalty of rework. This is due to the extent of integration with hardware and other software.

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## Question # 5

Which are the problem with early testing?

### Answer:-

The problem with early testing in this environment is that with so many integration dependencies, how does someone create test harnesses and stubs that allow for an accurate test? Manually, the job is possible, but can be overwhelming when there are many interfaces involved. If you are developing in a language that has tool support for structural test case design and testing, you may find that the job can be very easy. Specifically, for C++ and Java,



Parasoft has a great toolset to design and perform structural tests, with a feature to automatically create a test harness and test stubs.

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### Question # 6

Explain Developer Testing?

#### Answer:-

Developer testing is essential to avoid high rework costs. To the testers, the software is a black box. Only the developers have the view and access to the code to test all conditions. In addition, not only are functional cases at stake, but also the structural tests for memory boundary violations and memory leaks. My experience is that developers can test software if they have a good process to follow, standards to show what is expected of them in terms of testing, and a way to hold developers accountable for the quality of their work. Management must also be making the message loud and clear that testing is part of the job and that quality is a shared responsibility between developers, testers, QA, and management.

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### Question # 7

Explain An Object-oriented View of Testing?

#### Answer:-

In the object-oriented view of testing, tests are isolated at a smaller scope, yet can have high complexity due to the interfaces with other objects. The object-oriented view of testing must be able to deal with classes, methods, and attributes and to validate those at a high level of coverage. In Shel Siegel's book, "Object-Oriented Software Testing," he describes the Hierarchical approach to O-O testing.

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### Question # 8

Explain hierarchical approach?

#### Answer:-

The hierarchical approach is at the heart of the object-oriented testing system. This test approach uses and builds upon several well-understood testing techniques, tying them together into a comprehensive testing system. The hierarchical approach leverages the fact that "everything is a system." It defines and applies testing standards for several levels of software component: objects, classes, foundation components, and systems. The hierarchical approach designates as SAFE those components that meet the testing standards for that kind of component. Once you designate a component as SAFE, you can integrate it with other SAFE components to produce the next-level component. In turn, you test this component to the level of safety associated with the component level it represents. SAFE is always a relative state. It depends entirely on the standards you choose to enforce, your application, your attitude toward risk, and the specific risks and risk management practices you adopt in your project. The hierarchical approach provides guidelines for minimum safety; you decide what is right for you.

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### Question # 9

Explain what is QMS?

#### Answer:-

A quality management system in accordance with ISO 9001:2000 will provide your organization with a set of processes that ensure a common sense approach to the management of your organization. The system should ensure consistency and improvement of working practices, which in turn should provide products and services that meet customer's requirements. ISO 9000 is the most commonly used international standard that provides a framework for an effective quality management system.

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### Question # 10

Can you please explain the difference between ISO and CMM level?

#### Answer:-

The difference is that the CMM is a way to communicate capabilities, and ISO is a way to communicate the process. They are not necessarily incompatible. The Capability Maturity Model is a very specific way of classifying an organization's software development methods. In a certain way, it tells how the quality of its software designs is likely to be repeated. ISO-9000 procedures describe a (possibly) definite development process but gives no indication of the likely quality of the designs or whether multiple software efforts are likely to produce software of similar quality.

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### Question # 11

How do you test a Pen?

#### Answer:-

Using One Note (or many) of MS. And based on the specifications for the Pen, test the pen.

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### Question # 12

What are beta test and alpha test?

#### Answer:-

Beta test & Alpha tests are type of Acceptance Testing. Beta testing is performed at the client's site in the absence of the development team. Whereas alpha testing is performed at the developer's site.

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### Question # 13

What is the main difference between Stress and load testing? Give us answer with Proper Examples?

#### Answer:-

In Load Testing, we measure the response time and throughput for a web based application which has a large number of users.  
In Stress testing, we test the same application for slightly more number of users than it is intended to be used.

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### Question # 14

How do an incremental process model and certification work together to produce high quality software? In your own words, describe the intent of certification in the clean room software engineering context?

#### Answer:-

Cleanroom development uses an iterative approach, in which the product is developed in increments that gradually increase the implemented functionality. The quality of each increment is measured against pre-established standards to verify that the development process is proceeding acceptably. A failure to meet quality standards results in the cessation of testing for the current increment, and a return to the design phase.

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### Question # 15

Are there characteristics of a system that cannot be established during system engineering activities? Describe the characteristics, if any, and explain why a consideration of them must be delayed until later engineering steps?

#### Answer:-

When putting a system together, the different components interacting may show unexpected behaviors. It is hard to be able to predict these completely.  
A typical example happens in power plants when running steam boilers or power generators in parallel. The load is not distributed evenly, as would happen on a stand alone unit, but needs to be constantly tweaked.  
In addition, there are unexpected configurations resulting from the installation itself, which create unstable modes due to interaction. These must be addressed and proper compensation through the control system be applied.

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### Question # 16

When we write Test cases? & Why will write Testing?

#### Answer:-

Test Case is a document which acts as reference or record. Test case includes not only test input and expected behavior but also test step and description and pass fail criteria. It is a good practice if we write a test case before we execute it. It will give a brief idea that what we have to test. In addition to this it acts as record which can be used by new tester to understand and then test.

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### Question # 17

Tell me how does agile communication differ from tradition software engineering communication? How it is similar?

#### Answer:-

Agile communication is quicker than traditional software development communication in the following ways:  
First, the project teams are "co-located" so that any questions are immediately answered instead of using phones, email, etc to ask coworkers for ideas, thoughts or answers. Every day an Agile team meets for a quick 15 minute meeting (sometimes called a daily scrum) to refine what tasks were completed the previous day, what will be done by the team today and what impediments are prohibiting the team from getting the work done.  
Agile teams are constantly refining scope based on empirical data from previous releases, test results and discoveries where traditional projects design and code up to the delivery date only to discover problems when it's very expensive to correct.

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### Question # 18

Explain Software Quality Control?

#### Answer:-

A set of activities for ensuring the quality of the software product is known as Software Quality Control.  
The focus is on identifying the defects in the original products produced.  
It is limited only for Testing phase of SDLC.  
Software Quality Control is governed by Software Quality Assurance.  
Software Quality Control is detection oriented.  
The scope relates to specific product.

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### Question # 19

Which Software Quality Control Nomenclature is implemented for a software product?

#### Answer:-

Software Quality Control Nomenclature:  
- Verifying: comparing the code predictions  
- Validating: Comparing the prediction of code with test data



- Version Testing: Comparing output of the current version with output of the previous version
- Installation Testing: Comparing the result with newly installed code to the sample result code
- Development Code: Code tested only by the software developer.
- Alpha Code: Testing of the software product internally by selected users.
- Beta Code: Code testing internally by a large numbers of users.
- Released Code: Well tested and documented code that is officially distributed.

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### Question # 20

What are Software Quality Control factors?

#### Answer:-

- Functionality - To determine the required functionality in the software
- Usability - To determine the ease of the software is to use.
- Maintainability - To determine whether the modifications of the software can be made.
- Efficiency - To determine whether the software is efficient.
- Portability - To determine whether the software can be transferred to another environment.
- Reliability - To determine the reliability of the software as per the client's needs.

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### Question # 21

What are the quality characteristics of ISO 9126?

#### Answer:-

- Functionality : Functions that satisfies the specified requirements.
- Reliability : A set of attributes that are capable of software maintenance under specified conditions.
- Usability : A set of attributes that is capable of effort bearing on individual's performance.
- Efficiency: A set of attributes that are capable of balancing the relationship between performance of software and the resources used.
- Maintainability: A set of attributes that are capable of bearing the effort required for specific modifications.
- Portability: A set of attributes those are capable to bear on the ability of the software to be transferred on another environment.

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### Question # 22

What are the factors that influence software quality?

#### Answer:-

- Clear purpose of the product. All documentation must be clearly written.
- Completeness to the fullest development of the product.
- Only needed information and minimum lines of code should present. It is important as the memory is limited.
- The software product should be portable, so that computers of various configurations would support the execution of the product.
- Product should be maintainable, so that the updating activity can be continued throughout the life time of the software product.

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### Question # 23

What are the Software Control Methods?

#### Answer:-

- A paradigm that is Goal Question centric.
- A method that control the overall risk.
- Quality Control that involves Plan, Perform, Check, Action Model.
- Complete Software Quality Control.
- Software Development Method that involve the Spiral Model.

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### Question # 24

Define about Quality Assurance?

#### Answer:-

- Focused on planning, documentation and agreeing certain guidelines that ensures quality.
- The outcomes of Quality Assurance are quality plans, inspection plan, test plan.
- QA is to prevent defects from entering into solutions.

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### Question # 25

Can you please explain the difference between Quality Control and Quality Assurance?

#### Answer:-

- Quality Assurance:
  - Focused on planning, documentation and agreeing certain guidelines that ensures quality.
  - The outcomes of Quality Assurance are quality plans, inspection plan, test plan.
  - QA is to prevent defects from entering into solutions.
- Quality Control:
  - Includes the activities that are designed to determine the level of quality.
  - QC is a reactive means which measures and monitors the quality
  - Includes operational activities and techniques to meet the quality needs.



- QC involves in verifying the desired quality levels.

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### Question # 26

Explain about Quality Control?

**Answer:-**

Includes the activities that are designed to determine the level of quality.

- QC is a reactive means which measures and monitors the quality
- Includes operational activities and techniques to meet the quality needs.
- QC involves in verifying the desired quality levels.

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### Question # 27

What are Software Engineering practices and attributes that are required for assessing the reliability of good architectural and coding practices?

**Answer:-**

The following are the SE Practices and attributes:

- Coding practices / standards.
- Practices of Application Architecture.
- Determining the complexity of the algorithms.
- Determining the multi-layer design compliance.
- Ratio of component and pattern usability.
- Determining the software to avoid the patterns which would lead to unexpected results / behaviors.
- Determination of data integrity and consistency

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### Question # 28

What are the best practices for assessing security a software product?

**Answer:-**

Implementing proper Application Architecture Practices.

- Design compliance of multi-layer components and their functionality.
- Input validation, Cross Site Scripting best practices
- Proper handling of error and exceptions.
- Proper access controls to the program and system functions.

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### Question # 29

What are best practices for assessing performance efficiency of a software product?

**Answer:-**

Practices of implementing Application Architecture.

- Interactions with remote resources should be appropriate.
- Proper management of memory, network and disk space.
- Best coding practices.
- Proper and appropriate data access performance and management.
- Appropriate compliance with Object Oriented and Structured Programming practices.
- Appropriate compliance with SQL Programming best practices.

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### Question # 30

Explain Software Technical Size?

**Answer:-**

The most technical sizing method is measured in terms of Line of Code per technology.

- The number of lines include in functions, files, classes and tables.
- These are computed with backfiring the Function Points.

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### Question # 31

Explain Software Functional Size?

**Answer:-**

The very common function size is Function Point Analysis.

- FPA is all about measuring the software deliverables.
- FPA is based on the requirements of the user and presents accurate representation of developer and estimator.
- FPA reflects the functionality that is delivered to the client.
- FPA involves in identifying and weighting of inputs, outputs and data storage.

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### Question # 32

What are the software size requirements in Software Quality Control?

**Answer:-**

There are two types of software sizes:

Technical Size:

- The most technical sizing method is measured in terms of Line of Code per technology.
- The number of lines include in functions, files, classes and tables.
- These are computed with backfiring the Function Points.

Functional Size:

- The very common function size is Function Point Analysis.
- FPA is all about measuring the software deliverables.
- FPA is based on the requirements of the user and presents accurate representation of developer and estimator.
- FPA reflects the functionality that is delivered to the client.
- FPA involves in identifying and weighting of inputs, outputs and data storage.

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**Question # 33**

Explain Software Functional Quality?

**Answer:-**

SFQ is pertaining to conformance to the functional requirements.

- The SFQ is measured by the level of end user satisfaction.
- The usability and the intuitiveness and responsiveness of the use cases are referred, so as to determine the simplicity / complexity of the operations.
- SFQ compliances with the original design, and desired testability.
- Example: Voice of the Customer can be compared with the level of intuitiveness and responsiveness to measure the quality.

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**Question # 34**

Who are involved in Software Quality Control?

**Answer:-**

Project Manager - Controls the software engineering work performed during the software development.

- Designer - Assists the team to complete the overall design of the software project implementation.
- Technical Advisors - Supports to implement all technical aspects and imposes the quality practices.
- Checkers/Testers - Performs the complete testing of the software project at various levels.
- Quality Assurance Manager - Confirms the software product is as per the expected result with proper guidance and co-ordination with the development team.

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**Question # 35**

What is the process of Software Quality Measurement?

**Answer:-**

Quantifying the dimensions of the software product, to what extent the rate of the product is met.

- Qualitative and quantitative approaches provide the aggregate view of the product.
- Linear continuum need to be supplemented by the identification of the critical programming bugs.
- Consequences that might lead to catastrophic outages need to be properly identified.
- The critical application characteristics measurement involves the structural attribute measurement of the application architecture, coding, in-line documentation.

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**Question # 36**

What are the changes in a company when it receives ISO 9001 certification?

**Answer:-**

Quality being part of every day operations, is the internal impact.

- Quality becomes as a part of setting and managing the objectives, practices.
- The open up of operations to customer audits, is the external impact.
- Procedures and record-keeping improve dramatically.
- The implementation of this standards will obviously takes the work to keep audits and the appropriate follow-ups fluent.

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**Question # 37**

Explain software control views?

**Answer:-**

Transcendental View : Quality can be recognized and not defined.

User View: Quality as suitable for the needs.

Product View : Quality as related to the inherent characteristics of the product.

Value-based View: Quality is dependent on the number of customers those who are willing to pay for the software product.

Development View : Quality that is in conformance to specification.

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**Question # 38**

List the benefits of Software Quality Control?

**Answer:-**

Following are the benefits of SQC:



- Increased productivity of the development team.
- Improved Product Quality: Test statistics and defect tracking are more precise and up to date.
- Decreased re-work costs as the detection of defects are found earlier in the software project development lifecycle in every stage.
- Increased confidence levels in existing product management and future product development.
- Increased credibility as the software produced will be highly qualitative.

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### Question # 39

What are the Project Control Activities?

**Answer:-**

The following are the activities of project control:

- Verify the integrity of the database files.
- Check the transcription errors while inputting and referencing the data.
- Verify the data consistency.
- Perform the internal review of documents.
- Perform the completeness check.
- Compare the existing results with previous results.

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### Question # 40

Described Software Quality Control Reviews?

**Answer:-**

Review of requirement.

- b. Review of design.
- c. Review of code.
- d. Review of deployment plan .
- e. Review of test plan.
- f. Review of test cases

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### Question # 41

Described Software Quality Control Testing?

**Answer:-**

- a. Unit Testing
- b. Integration Testing
- c. System Testing
- d. Acceptance Testing

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### Question # 42

What are the activities that are involved in Software Quality Control?

**Answer:-**

The activities that are involved in Software Quality Control are Reviews and Testing.

Reviews:

- a. Review of requirement.
- b. Review of design.
- c. Review of code.
- d. Review of deployment plan .
- e. Review of test plan.
- f. Review of test cases.

Testing:

- a. Unit Testing
- b. Integration Testing
- c. System Testing
- d. Acceptance Testing

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### Question # 43

When do we use a c-chart?

**Answer:-**

Control charts are suitable for tracking items such as:

- Production failures
- Defects by life cycle phase
- Complaint/failures by application/software
- Response time to change request
- Cycle times/delivery times
- Mean time to failure

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### Question # 44





What is meant by risk? how you can avoid the risks?

**Answer:-**

Risk can be anything that leads to failure / defect / error in the application or process.

We can avoid risk by applying proper risk matrix in the process. Risk Matrix shows the controls within application systems used to reduce the identified risk, and in what segment of the application those risks exist.

Consider, Team members are leaving from the organization in the middle of the project is the risk for the Manager. For that he can take the preventive action by ask for the bond from the employee or can have the countable backups in the project.

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**Question # 45**

What are Noise Variables?

**Answer:-**

Noise variable factors either cannot be controlled or are difficult and or expensive to control during the design or actual production stage.

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**Question # 46**

How you can track bug and report through Quality Control dept?

**Answer:-**

According to me i track bug by defect tracking tool and i report it through defect life cycle. i i was wrong please correct me.

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**Question # 47**

Can you please explain the difference between I.S.O and C.M.M levels?

**Answer:-**

The CMM is a way to communicate capabilities.

The ISO is a way to communicate the process.

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**Question # 48**

What are the elements of a QC plan?

**Answer:-**

The answer to this question depends on industry, company and/or project. In our software company, the closest thing to a Quality Control plan are our Test Standards and Test Plans.

The elements of our Test Plans are:

- 1) Introduction
  - Purpose
  - Product description
  - System architecture
- 2) Scope
  - Test coverage
  - Features to be tested (in scope)
  - Features not to be tested (out of scope)
  - Compatibility matrix
- 3) Test strategy
  - Test objectives
  - Test approach
  - Test environment
  - System dependencies
  - Test tools
  - Assumptions
  - Risks
- 4) Process
  - Test process and guidelines
  - Priority and Severity defined
  - Pass/fail criteria
  - Test entry/exit criteria
  - Test resources
  - Deliverables required for testing
  - Roles and responsibilities
  - Approvals and sign off

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