How to evaluate QA tester's work?

Tricky Test manager interview question may sound like : Imagine being a test manager and trying to evaluate the performance of your QA testers. As we all know staff performance reviews is a one of the **responsibilities of QA Managers**. Software quality assurance engineers do a wide variety of tasks, such as bug hunting, bug reporting, test planning, and test tool development. To fully evaluate the work of the QA tester, Test Manager would evaluate the quality of work on each of the tasks. As I noticed during several interviews, some Test managers prefers to focus on quantitative measures like number of bug reports or number of bug reports returned as duplicates, but in my opinion any performance review that is based on number, can be easily gamed. The **successful QA manager** would focus on qualitative measures while providing performance evaluation for software QA Testers like quality of test plans, test cases and bug reports. Another measurements could be the ability of SQA Engineers to research and acquire a new testing skills, attitude towards coworkers, ability to manage time effectively, capacity to respond to changing priorities.

What is a good ratio of QA tester to developer?

It depends - is a correct answer on this no right or wrong Test Manager interview question. In my humble opinion, there exist no testing industry standards that cover the ratio of quality assurance testers to developers. In order to provide meaningful answer on the open ended interview question QA manager needs to know specific context. I would expect that the candidate for Test Manager position would ask these questions back:

How good a developers? Do they prefer to throw badly written code over the wall and blame QA testers for missed bugs and features? In this case QA Manager would need to hire more testers.

How much company is going to pay for mistakes discovered by customers? Probably it would be wise to spend more on hiring proper QA team members and save on the future expense of fixing bugs in the production environment.

How is the company budget? Could the company afford to hire additional QA Tester instead of another developer?

What do you do when you get bored?

Test interview question should show the real value of interviewee. One of this not puzzle interview questions is asking the prospective candidature about dealing with utter boredom. Occasionally testers get involved in the never ending testing of the same module of the same application. How should SQA Engineer adjust working behavior to continue successfully work on software project?
One of the ways it to exploit variation, for example stop testing the same modules, using the same methods. Try to a new ways to test the application.
The tester could also put the computer to work. Try to learn some scripting languages like Perl, Python or just shell and apply that in your testing to reduce monotonous and repetitive tasks.
Work together with software developer, asking a user about work flows or pitfalls, or business analyst to understand what is going wrong and it will make your job more interesting.

QA interview - testing toaster

How would you test a toaster, vending machine, electric kettle or ATM? Some QA managers consider

this most common interview question as perfect QA interview question. In the same time the test interview question is the easiest one. QA engineer needs to tell just two magic words "requirements" and "specifications" and then approach toaster tests as any other usual application under test with different testing types like functionality testing, usability, white box testing, black box testing, performance testing and so on.

What is agile manifesto?

The Agile Manifesto is a statement of the principles that underpin agile software development:

> Individuals and interactions over processes and tools
> Working software over comprehensive documentation
> Customer collaboration over contract negotiation
> Responding to change over following a plan
> That is, while there is value in the items on the right, we
> value the items on the left more.

The QA team may want to add one more principle to the Agile Manifesto

> Craftsmanship over Execution

This is meant to focus software developers on creating good code vs. simply writing code that barely works. Both craftsmanship and execution are good things, but taking care to create good code is viewed as more important from testers and customers point of view.

Can you solve this QA interview puzzle?

As you know many interviewers like to ask interviewee to solve tricky puzzle as QA interview question. Perhaps you heard about puzzles like: why are manholes covers round, how do they make M&Ms, how many piano tuners are there in San Francisco. Almost all puzzles used for QA interview are documented in the book "How Would You Move Mount Fuji?" If after reading this book you fill yourself as the ace at QA puzzle questions, then I dare you to solve the hardest QA interview puzzle question ever:

> A hundred prisoners are each locked in a room with three pirates, one of whom will walk the plank in the morning. Each prisoner has 10 bottles of wine, one of which has been poisoned; and each pirate has 12 coins, one of which is counterfeit and weighs either more or less than a genuine coin. In the room is a single switch, which the prisoner may either leave as it is, or flip. Before being led into the rooms, the prisoners are all made to wear either a red hat or a blue hat; they can see all the other prisoners' hats, but not their own. Meanwhile, a six-digit prime number of monkeys multiply until their digits reverse, then all have to get across a river using a canoe that can hold at most two monkeys at a time. But half the monkeys always lie and the other half always tell the truth. Given that the Nth prisoner knows that one of the monkeys doesn't know that a pirate doesn't know the product of two numbers between 1 and 100 without knowing that the N+1th prisoner has flipped the switch in his room or not after having determined which bottle of wine was poisoned and what color his hat is, what is the solution to this puzzle?

Should all testers be developers?

One more QA manager interview question could help to analyze the management abilities of candidate for QA manager position. This interview questions especially critical for the QA teams working in Agile environment.

In certain domains, there is some amount of testing that cannot reasonably be automated in the proper time. This testing requires that QA Engineer eyeballs carefully look at the screen and work through the application under test. It isn't necessary for these QA Engineer to be developers, in fact, it might be better if they aren't programmers, since developers view the world differently than most people. You may want non-programmers QA Engineer for the following mundane tests:

- UI testing
- Usability testing
- Internationalization testing

In the same time QA Manager definitely wants your testers to have the coding skills and be developers when doing the following kinds of tests:

- White box testing
- API testing
- Performance testing
- Database testing

How would you deal with smarty pants SQA Engineer

This is a perfect QA manager interview question. Software quality assurance job market took a dramatic hit early this year, some signs of stabilization are appearing. A few recruiters believe layoffs have slowed. In the same time companies are not ready to begin hiring full-time testers, but many companies started to hire the contract workers to handle quality assurance projects that had been suspended last year. Hiring tester as contractor is always a big hurdle for QA manager, the proper answer on the dealing with smarty pants SQA Engineer would demonstrate management abilities.

There is the carrot and stick approach on resolving the work performance of tester, who instead of doing requested work tries to dig into the code and fix developers bugs in the application code. The carrot approach requires convincing QA Engineer to do something meaningful about the software application quality like discovering the weak point in application logic, set up testing environment for hard to test features, decide when the testing should be completed and finally sign off the production for production. QA Manager could also use the stick approach by asking QA Engineer serious questions about functionality of the new features, testing coverage, number of high severity bug logged, number of usefully executed test cases and when the application under test would be ready for production.

Name any software quality assurance or software testing magazine?

As an interviewer I would not be surprised if prospective candidate for software quality assurance engineer position would answer that the interviewee doesn't read software quality assurance or software testing magazines at all. I personally subscribed for couple of free software testing magazines, but usually I have found only one or two articles in the fiftyor so quality assurance magazines I have browsed. My sources of software related information are primary web based as it allows me get an access to the technical material I'm interested in when I actually need it. I fell that the software testing magazines are a little bit too pushy with sponsored articles, tools and companies. Testing blogs and books are the best resource of information for me. Anyway I would like to mention several free software

testing magazines which could be useful for software tester.

Better Software Magazine
Software Test and Performance Magazine
Testing Experience Magazine

What's in your Testers Tool Box?

The test interview is not only a test of interviewee specific knowledge, but an opportunity to knowledge exchange. As an interviewer I have to spend at least half an hour interviewing some potential Quality Assurance Engineer and I want to use these minutes wisely. For example, I like to interview testers about various tools they use during preparation and actual testing. Here are some wonderful tools I use in my day-to-day testing routine:

Firebug - extension for Mozilla Firefox browser allows the debugging, editing, and monitoring of any website's CSS, HTML, DOM, and JavaScript;

YSlow for Firebug - helps QA Tester to analyzes web page performance by examining all the components on the page and even gives suggestions on how to make it faster;

Web Developer toolbar for Mozilla Firefox - makes CSS, HTML and link validations right from your menu bar;

Selenium - a free software testing framework for web applications;

Windows Virtual PC - is a virtualization suite for Microsoft Windows operating systems, and an emulation suite for Mac OS X on PowerPC-based systems. Virtual PC allows you create separate virtual machines on your Windows desktop;

Cygwin - a Unix-like environment and command-line interface for Microsoft Windows;

OpenSTA - GUI-based web server benchmarking utility that can perform scripted HTTP and HTTPS heavy load tests with performance measurements;

WinSCP - an open source SFTP and FTP client for Microsoft Windows;

HttpWatch – an HTTP Viewer and HTTP Sniffer for IE and Firefox;

Do you use any other good tools?

Why do you want to leave your current job?

Here are some suggestions for answering this interview question. Try to put some positive spin in your answer. First of all it means that you shouldn't say anything negative about your current position and people while being interviewed at new company or at least try a neutral mode. For example one interviewee could answer as "I have had it with working with QA Engineers who couldn't test a toaster and don't want to figure out how, a testing methodology that could be described as bedlam at best, a control freak manager who wont give anyone any responsibility and only asks about weekly status reports". Instead, the way smart QA Engineer might put it is more positive way like this "I've been working with my wonderful company to advance the state of testing. My management has reached a

point where they are satisfied with the state of quality assurance team, while I am still striving to improve in the art of quality assurance. I feel that I can no longer add value at my present company and it is time for me to start a new life"

My personal answer may sound like - I'm not sure I want to leave my company, but in the same time your job posting interested me and I really would like to talk about the opportunity your company has available.

Define test automation requirements for developing web application?

Imagine that you were asked to evaluate web application from test automation friendliest point of view. These criteria could be used to name web application automation friendly in order to test an application with SilktTest, QTP, Selenium or any other test automation tool.

- All web pages should have names
- Similar objects should have consistent names
- Unique names should be used for various objects
- All the images have ALT attribute test assigned
- Dynamic content should have a proper name or html id
- All tables displaying data should have names

How do you keep your testing skills updated?

This is a wonderful testing interview questions and I ask this one to everyone whom I interview recently for QA Engineer position. There are a few possible answers:

- Read testing websites, magazines and books to understand latest trends in software testing industry.
- Read about new testing tools available in market.
- Practice by trying out different testing tools
- Attend professional testing conferences

Does your team use continuous integration?

If tester doesn't understand what interviewer means by continuous integration, the tester probably didn't work in a good software environment. How can QA Engineer get steady code build for testing if there is no bulletproof method of building and deploying code to testing and production environment? If there is no continuous integration process in place, QA Engineers most likely would spend time finding and reporting "show-stopper" and unit level bugs. The interviewee should be prepared to answer what source control (also known as version control, source control or (source) code management (SCM) systems they used. There are plenty of them around and most popular are SV, Perforce and VSS. The interviewee also needs to know about continuous integration software like CruiseControl, Bamboo or Hudson.

Why does test automation project fail?

The following problems are often encountered during test automation projects and may result in failing test automation projects:

- Management doesn't treat test automation as software development. Anyone can test and automation is easy – just record and playback.
- QA team select wrong set of test cases for test automation. In the same time, management aims for 100% test automation of all test cases.
- QA Engineers spend time between manual and automation testing, instead of concentrating on one task.
- No one realized that automation test cases are difficult to maintain and manage.
- The development, maintenance, and management of automated test scripts often need additional time and resources than manual test execution by inexperienced tester.

How to report bugs effectively?

The best way to report bugs effectively is too use standard bug report template. The bug tracking tools like Jira or Bugzilla already have predefined bug report template. Quality Assurance Engineer should include good supporting documents with some of the bug reports like screen shots, data samples or log files.

How do you know when to stop testing?

There are several ways for Quality Assurance Engineer to find out when testing stops:

- Software product is never tested enough
- Release, testing or customer deadline has been met
- All test cases have been executed and certain predetermined percentage of the passed
- Predetermined code coverage percentage is met
- The number of found bugs or bug severity falls to a certain point
- No money left to continue testing

The answer on this SQA interview questions will depend on whether the software is mission critical, and on a zillion different variables, but all are acceptable answers in many ways.

Could you name a few testing activities?

QA Engineer role usually includes a variety of testing activities:

- Create test plans and test cases
- Execute tests
- Log bugs
- Communicate with various team members like testers, developer and managers
- Make crucial decisions on whether something is a bug or a design constraint
- Schedule projects
- Allocate human and technical resources
- Make crucial decisions about the software applications
- Automate testing

What makes a good QA Engineer?

A good QA Engineer should able to perform the following tasks successfully in any environment:

Verification: A good QA Engineer can officially state that it is possible to accomplish certain tasks.
Detection: A good QA Engineer seeks issues that exist, either in the process or the product.
Prevention: A good QA Engineer recognizes potential issues before they become visible.
Reflection: A good QA Engineer looks back at how problems and bugs ended up in the product and analyzes this data to find out how to make the process better in the future.

What are prerequisites for white box testing?

In general prerequisites for white box testing are the same as for black box testing. The only difference is the access to the application source code. The white box tester should ask for detailed requirement, functional specifications, high-level design documents, detailed design documents and source code. The white box QA Engineer would analyze the source code and prepare test cases for testing the functionality to ensure that the code is behaving according with the requirements and specifications.

What tests shouldn't we automate?

Most types of testing benefit from automation, but some testing type's needs a real human attention and intelligence. It is possible, but difficult to automate GUI even with agile compatible tools like Selenium. Usability testing, exploratory testing and test that will never fail should not be considered as targets for test automation.

What tests should we automate?

Some testing type's needs human attention and intelligence, but most types of testing benefit from automation. In the same time QA Engineer should automate only that which needs automating. No one can automate 100 percent of testing work, but in certain areas like performance testing, load testing, stress testing regression testing, your team may have chance of reaching near to 100 percent of test automation. Other areas of easy automation would be API testing, test data set up and creation.

Do you recommend using test automation in agile environment?

Proper test automation should be a core agile practice. Successful agile projects depend on test automation. Thriving agile teams expect to have working software all the time, which allows them to build and deploy production ready software application as often as customer needed. Agile teams cannot accomplish this goal without constant and proper testing. The following list contains main reasons for test automation in agile process:

Manual testing is long process
Manual testing is not repeatable process
Manual testing is error prone
Automation frees software engineer time
Automation regression tests offer a safety net
Automated tests provide feedback as often as needed
Automated tests become living documentation

What is stress testing?

Stress testing is used evaluate the application's behavior when it is pushed beyond the normal or peak

load conditions. The main goal of stress testing is to discover application issues that appear only under high load conditions. These can contain such issues as synchronization problems, race conditions, and memory leaks. Graceful performance degradation under high load leading to non-catastrophic failure is the desired result. Load test engineer could use the same scripts and tools as were used for performance testing, but using a very high level of simulated load.

What is performance testing?

Performance testing is used to determine the response time/latency, throughput, resource utilization (CPU, RAM, network I/O, disk I/O) and workload of a software application. The main goal of performance testing is to identify how well your application performs in relation to your performance objectives. The intent of the performance testing is not to break the application under test. The intent is to observe and document performance under expected usage conditions. There are performance test available to help simulate load, for example Apache JMeter, WebLOAD, LoadRunner and so on. Using test automation tools Load Test Engineer can simulate load in terms of users, connections, data, and in any other ways.

What is load testing?

It would be a mistake for QA tester to define load testing only as a generic term for stress and performance testing. Load testing is the process of subjecting the application under test usual workload conditions in order to get information about normal system behavior. The goal of load testing is not to crash the application under test, but learn how the system would continuously work. That's why load testing sometimes called as longevity or endurance testing. Examples of load testing include testing a web server with constant load or continuously sending print jobs to printer. There are many load testing tools available on market from open source projects like JMeter, OpenSTA or commercial software for example LoadRunner or SilkPerformer.

Which testing types do you know?

This comprehensive list covers a lot of testing types will help you to properly respond on this QA interview question, but most likely still missed a few types of testing techniques. As potential candidate for QA Engineer position, you do not need to memorize all testing types in order to provide and answer on QA interview question, but it would be nice you could name at least a ten testing types, and even better if you could give the complete definition of some of the testing types and explain how you used them in your testing career.

Acceptance Testing
Ad Hoc Testing
Aesthetics testing
Agile Testing
All-pairs testing
Alpha testing
Automated testing
Beta testing
Black box testing
Boundary testing
Cloud testing
Comparison testing

Compatibility testing
Conformance testing
Consistency testing
Database testing
Data-driven testing
Deployment testing
Documentation testing
Domain testing
Dry run testing
End to end testing
Exploratory testing
Fault injection testing
Functional testing
Fuzz testing
[Gray box testing](#)
Guerrilla testing
GUI testing
Hybrid testing
Installation testing
Integration testing
Interface testing
Internationalization testing
Interoperability testing
Keyword-driven testing
Life cycle testing
[Load testing](#)
Localization testing
Logic testing
Manual testing
Migration testing
Monkey testing
Mutation testing
Negative testing
Pair testing
Performance testing
Pilot testing
Positive testing
Protocol testing
Recovery testing
Regression testing
Reliability testing
Requirements testing
Risk based testing
Sanity testing
Scalability testing
Scenario testing
Scripted testing
Security testing
Smoke testing
Soak testing

Specification testing
Standards testing
State testing
Stress testing
System testing
Testability testing
Unit testing
Upgrade testing
Usability testing
Web testing
White box testing

Who is responsible for the quality in agile project?

In traditional phased based or waterfall software development projects, the role of the quality assurance team is clearly defined. The Quality Assurance Engineer review software requirements, develops test plans and creates tests cases to verify during test case execution that the requirements are implemented correctly. The responsibilities of tester in the agile project are different, but despite all differences in traditional phased based, waterfall and agile projects it is the responsibility of the whole team - business analysts, developers and testers to create quality working software.

What should tester do in an agile project?

Agile tester responsibilities in agile project are more difficult then in the waterfall model of software development. Based on the agile manifesto principles, agile tester should deliver value to the customer focusing on big picture; provide continuous feedback to customer, agile team and management; enable face-to-face communication between customer and agile team; practice continuous improvement in tools, skills and customers and positively respond to changes.

Could you describe an agile tester?

An agile tester is professional tester who, like change, work in partnership well with both business and technical team members, and comprehend the idea of using tests to document requirements and drive software development. Agile tester tends to have great technical skills, knows how to collaborate with other for test automation, and also qualified exploratory tester.

What is boundary condition testing?

In all software applications, bugs most often emerge at boundary conditions. QA Engineer should carefully select test data in which values lie along data extremes. Boundary values usually contain maximum, minimum, and just inside outside boundaries. If selected test case work correctly for these special cases, then they will probably work correctly for all other values.

The technique of boundary condition analysis requires in-depth understanding of what the system is doing behind the tricky user interface, and cautious investigation of software system and data to correctly establish the precise boundary conditions. After that testers can perform a additional methodical analysis of any recognized boundary conditions and potentially increase likelihood of identifying real issues caused by this specific test model.

What is test strategy?

The test strategy is defined set of methods and objectives that direct test design and execution. The test strategy describes the overall testing approach for the testing of application under test including stages of testing, completion criteria, and general testing techniques. The test strategy forms the basis for test plans

What is test plan?

As defined in IEEE 829-1998, also known as the 829 Standard for software test documentation, test plan is a management planning document describing the scope, approach, resources, and schedule of intended testing activities. Test plan identifies test items, the features to be tested, the testing tasks, who will do each task, and any risks requiring contingency planning. A test plan is usually prepared based on the test strategy document.

What is test case?

One of the definitions of test case may sound like: test case is particular set of steps and data along with anticipated results for a specific test objective. Ideally test case should only check one limited subset of a feature or functionality.

Click here to see a sample Test Case template

What is software bug?

A software bug or just bug is an error, flaw, mistake, failure, fault or "undocumented feature" in a computer application that stops it from behaving as planned, producing an inaccurate or unanticipated result. Almost all bugs arise from inaccuracy and mistakes completed by software developers in either a application's source code or its design, and a few bugs are caused by compilers producing incorrect code.

What is Agile Testing?

Agile testing is a software testing practice using agile methodologies, treating software development as the customer of testing.

Agile testing requires testing early and often as code becomes available and stable enough from unit level testing. Executing only manual testing in agile development usually result in either software with bugs and issues or slipping schedules because it is usually not possible to test the entire build manually before each production release.

What is Ad Hoc Testing?

Ad hoc is a Latin phrase which means "for the particular end or case at hand without consideration of wider application". It normally signifies a solution intended for a specific problem or task, and which cannot be adapted to other purposes Ad hoc software testing is a type of testing executed without documentation and planning. Ad hoc tests are intended to be run only once, unless a defect is discovered. Ad hoc testing is a part of exploratory testing.

What is Acceptance Testing?

Acceptance Testing is black box testing performed by customer to determine whether to accept a software product. Normally performed prior to software application delivery to validate the software application meets a set of agreed acceptance criteria.

Which is better - black, gray or white box testing?

It is a tricky test interview question. Most likely the interview tries to separate the wheat from the tares. Most likely, if interviewee is inexperienced tester, s/he will try to emphasize the gray box testing as silver bullet to slay all issues with application under test. The correct answer on this tricky QA interview question would be the following: it's impossible to declare one of the testing approaches to be better then another. It depends of Quality Assurance Engineer skill set, the type of the project, what is trying to be achieved during testing.

What is gray box testing?

In recent years the term gray box testing has appear into common usage. Gray box testing is a software testing procedure that uses an amalgamation of black box testing and white box testing techniques.

With gray box testing approach, Quality Assurance Engineer does have the knowledge of some of the internal structure of the application under test. In gray box testing, Quality Assurance Engineer creates some test cases for the internal mechanism of the application under test. For the rest of the test case, Quality Assurance Engineer uses a black box approach in applying inputs to the application under test and validates the outputs.

What is white box testing?

Sometimes White box testing called in different Quality Assurance organizations as glass box testing or clear box testing, uses an internal perspective of the application under test to design test cases based on the knowledge of internal structure. In order to work as white box tester, the tester has to work with the application code and therefore is needed to possess knowledge of coding and logic.

What is black box testing?

Black box testing assumes the application under test to be a black box that responds to input without reference to the source code or other information about the internals of the application under test. The black box testing focuses on the output to various types of input.

What is the difference between QA and testing?

Based on answers to the previous QA interview questions about testing and quality assurance, the main difference between QA and testing is that **software quality assurance** is oriented to defect 'prevention', while **software testing** is oriented to defect 'detection'. In other words testing measures the quality of a developed software application, QA measures the quality of processes used to create a quality software application.

What is Software Testing?

Based on Wikipedia's definition, Software Testing is an experimental investigation conducted to supply interested parties with information regarding the quality of the product or service under test, with respect to the context in which it is intended to operate. This includes, but is not limited to, the set of activities of executing a program or application with the intent of finding software bugs. Testing is oriented to defect 'detection'.

What is Software Quality Assurance

According to definition from Wikipedia, Software Quality Assurance (SQA) consists of a means of monitoring the software engineering processes and methods used to ensure quality. It does this by means of close audits of the quality management system under which the software system is created. These audits are usually backed by diferent standards, for example ISO 9000 or CMMI. Software QA covers the complete software development process - monitoring and improving the process, making sure that all standards and procedures are followed, and guarantying that issues are found and dealt with. SQA is oriented to defect 'prevention'.