



AT*SQA

Testing Essentials

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SAMPLE EXAM

Version 2019

AT*SQA

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AT*SQA Essentials of Software Testing — Sample Exam

Each question is worth 1 point.

#1. If software only works in one environment, is it “fit for purpose”?

- a. Yes
- b. Maybe, but only if the users will always use the software in that same environment
- c. Maybe, but it must be used in that environment at least 80% of the time
- d. No

#2. Who is more likely to work with users during UAT?

- a. Test analysts
- b. Test engineers
- c. Non-functional testers
- d. Senior test engineers

#3. When is a developer also a software tester?

- a. When they write and execute unit tests
- b. When they review test case documentation
- c. When they participate in project status meetings
- d. When they create software that is testable via automated tests

#4. What is the purpose of a test plan?

- a. To define how testing will be conducted for all projects in an organization
- b. To define the test approach for a particular project
- c. To define a capability or characteristic of the software that needs to be tested
- d. To define the inputs and actions to be taken to test a test condition

#5. User stories typically are used for requirements in which software development lifecycle?

- a. Workflow-based
- b. Sequential
- c. Agile
- d. Ad hoc

#6. With a project that must have the approval of a regulatory commission, which of the following is the most important factor in determining the best test approach?

- a. Documentation requirements
- b. Schedule
- c. Budget
- d. Testing levels

#7. Which of the following statements is true regarding a well-skilled and mature team?

- a. They require, and will complete, detailed documentation
- b. They depend on project management guidance to complete their tasks
- c. They prefer working with a formal lifecycle model such as V-model
- d. They can make any test approach work

#8. Operational acceptance testing is usually conducted by whom?

- a. System testers
- b. System operators
- c. System users
- d. Potential customers

#9. Which of the following is usually considered to be an advantage in an iterative model?

- a. The requirements are stable
- b. The users can provide early feedback
- c. Test automation is required
- d. There is time available to write detailed test cases

#10. If there are no specific documentation requirements for a project and only high-level documents describing the expected functionality of the software, what is the best approach for test cases?

- a. Test cases should be detailed so they can also serve as the requirements documents
- b. Test cases should contain enough information so the users can execute them as part of UAT
- c. Test cases should contain only enough information to serve as guidelines for the testers
- d. There should be no test cases because there is no basis for their creation

#11. You are working on a project in which both the budget and the schedule are tightly constrained. It is unlikely that you will have time to complete all the testing, and test environments may have to be shared with the developers. What is a reasonable adjustment to the test approach in this scenario?

- a. Implement a process-based test approach in a sequential lifecycle so that the coding is completed before testing starts
- b. Eliminate UAT to avoid the environment conflict
- c. Start testing early and share the environment with the developers to provide early feedback on new features and fixes
- d. Constrain testing to only unit and UAT so the test environment is not required

#12. Which testing technique is more suitable for determining if there are combinations of conditions that are not handled properly?

- a. Decision tables
- b. Boundary value analysis
- c. Exploratory testing
- d. Combinatorial testing

#13. Which of the following testing techniques is most suitable when quick feedback is needed on a software product with little documentation?

- a. Decision tables
- b. Boundary value analysis
- c. Exploratory testing
- d. Combinatorial testing

#14. You are testing a web application with a very restricted schedule. The UI is unstable and testing has been unsuccessful so far because of all the UI issues that are being encountered. You want to test that the database functionality is working correctly. What technique should you use?

- a. Decision tables
- b. Boundary value analysis
- c. Pairwise testing
- d. API testing

#15. Which of the following non-functional areas can be addressed with exploratory testing?

- a. Usability
- b. Reliability
- c. Maintainability
- d. Repeatability

#16. A customer loyalty program has three tiers based on the amount of money spent in the last 30 days. Tier one is for \$0 - \$100, tier two is for \$101 - \$500, and tier three is for any amount greater than \$500. By applying three-value boundary value analysis, how many tests will be needed to test all boundaries once?

- a. 6
- b. 9
- c. 10
- d. 15

#17. You are testing a water-conserving automatic watering system. The system uses a combination of ground sensors, information gathered from local agencies, and information from a weather agency. Using this information, the following results are expected:

- **If it is already too wet or if watering is not allowed, no water should be applied.**
- **If rain is predicted for tomorrow, only $\frac{1}{2}$ the normal amount of water should be applied.**
- **If more than one day of rain is predicted over the next three days, but no rain is predicted for tomorrow, only $\frac{1}{2}$ the normal amount of water should be applied**
- **If more than one day of rain is predicted over the next three days, and rain is predicted for tomorrow, only $\frac{1}{4}$ of the normal amount of water should be applied.**

Applying the decision table testing technique, how many tests are needed to achieve 100% coverage of this scenario?

- a. 4
- b. 6
- c. 8
- d. 12

#18. Which of the following is the return expected from test automation?

- a. The cost required to build the software
- b. The cost required to maintain the software
- c. The time saved from equivalent manual testing
- d. The length of time the automation will be usable

#19. How does test automation reduce costs?

- a. By utilizing the programming skills of the test team
- b. By improving the efficiency of testing
- c. By using low cost tools
- d. By replacing manual testers

#20. What is the first set of tests that should be automated for a new project?

- a. The build acceptance/verification tests

- b. The regression tests
- c. The functional tests
- d. The security tests

#21. What is one of the advantages of having shared code in a test automation framework?

- a. It eliminates the need for a function library
- b. It allows the automation engineer to experiment with new technologies
- c. It reduces the development and maintenance effort
- d. It allows automation engineers to create individual naming conventions

#22. You are working on an Agile project which has short iterations. The test analysts have been preparing manual test scripts, but this is taking a considerable amount of time. The software being tested is an application that has clearly defined states through which the user will pass. Given this information, what type of test automation is more appropriate?

- a. Data-driven
- b. Keyword-driven
- c. State-based
- d. In-line scripting

#23. You are working on a project that requires frequent production releases. There have been a number of regressions that have occurred with each release. Your manager wants to reduce the cost and occurrence of these regressions. You have decided to implement test automation to achieve these goals. How will test automation help?

- a. It won't. Test automation will increase the cost of finding and fixing defects.
- b. Implementing automation for functional testing will allow the testers to have more time for regression testing and this will reduce the number of defects that are escaping to production
- c. Test automation will find more defects and that will allow an efficiency of scale to be achieved as the developers become more efficient in fixing the larger number of defects
- d. Test automation can find regression defects quickly and accurately regardless of the frequency of releases and this will reduce the costs by having less defects found in production

#24. What is a likely outcome from implementing test automation when there is not a good test process in place?

- a. The test process will be developed as part of the test automation
- b. The test automation will mirror the chaos in the current manual environment
- c. The test manager will be exposed as incompetent
- d. The need for a test process will be removed as the automation will guide the process

#25. What is the role of the manual tester in test automation?

- a. To code the automation scripts
- b. To develop the code for the keywords in keyword-driven testing

- c. To track the progress of the test automation effort against the manual test effort
- d. To execute and do the preliminary debugging of completed automation scripts

#26. What happens if performance requirements are not specified?

- a. The performance targets cannot be identified
- b. The stakeholders will be unhappy with the test results
- c. The tools cannot be tuned properly
- d. The exit criteria cannot be evaluated

#27. Why is it a good idea to run a preliminary test in the performance environment before starting performance testing?

- a. To ensure the co-existing applications and systems are in place and operational
- b. To verify that there is sufficient data for the test to consume
- c. To test that all the necessary support personnel will respond as needed
- d. To validate that the schedule and budget will be sufficient for the test

#28. Why is it important to be able to repeat performance tests?

- a. Because monitoring is difficult and it is easy to miss important errors
- b. Because tests must be run more than once to determine if the issues are transient
- c. Because tests will need to be repeated after changes are made to the system
- d. Because servers often crash during testing and tests have to be repeated after rebooting

#29. Why is it particularly hard to get agreement from stakeholders on performance requirements?

- a. Because specific performance requirements are not part of the overall requirements for a system
- b. Because performance does not matter to most users
- c. Because acceptable performance is subjective
- d. Because performance can be improved after production so it is a low priority

#30. Which of the following is a purpose of conducting performance testing as part of acceptance testing?

- a. To verify that the requirements have been correctly documented for the expected system performance
- b. To verify that there is no inefficient code or design incorporated into the final system
- c. To verify that all integrations are managed efficiently
- d. To verify that contractual and operational requirements are met

#31. When defining reporting metrics for the test plan, which of the following is important to remember?

- a. The metrics must be accurate to 1/100 of a second
- b. The metrics must be summarized into average response times
- c. The metrics must be meaningful to those who will need to review them
- d. The metrics must focus on the 90th percentile rather than 100%

#32. You are working on creating a system performance test. You have identified the transaction threads that will be needed and have scripted the steps necessary to accomplish those transactions. What else do you need to know in order to complete the operational profiles?

- a. The total number of different transactions threads that are possible to complete in the system
- b. The frequency of execution for each of the transaction threads
- c. The user types and permissions for each transaction type
- d. The test data that will be required to complete each different transaction type

#33. Which of the following capabilities of a performance testing tool is often used to justify the cost of the tool?

- a. Keeping a constant load on the system for a defined period of time
- b. Monitoring the system response time for a user transaction
- c. Causing a system failure and verifying the time required to recover from the failure
- d. Automatic creation of the performance test scripts

#34. What is the earliest point in the SDLC where cybersecurity should be considered?

- a. Design
- b. Coding
- c. Testing
- d. Production release

#35. Cybersecurity testing can target specific controls. Which of these is used to identify that the system has been “hacked”?

- a. Input validation
- b. Encryption
- c. Malware scanning
- d. Intrusion detection

#36. Why should both verification and validation be used during cybersecurity testing?

- a. Verification will determine if the requirements are met and validation will determine if the right threats are addressed
- b. Validation will determine if the requirements are met and verification will determine if the right threats are addressed
- c. Verification will help to model threats and validation will determine if those threats are addressed correctly
- d. Validation will help to model threats and verification will determine if those threats are addressed correctly

#37. What is one of the major differences between cybersecurity testing and other types of testing?

- a. It also covers the ability of the system to recover
- b. It concentrates on how the system behaves when under attack
- c. It can only be conducted after the full system is assembled

- d. It requires special training, programming, and infrastructure expertise

#38. Which of the following is an example of static cybersecurity testing that can help reduce risk?

- a. Exercising the responses of a system when an intrusion is detected
- b. Demonstrating the speed and extent of recovering operational status after an attack
- c. Conducting a port scan for a new web application
- d. Testing for security vulnerabilities such as SQL injection as part of functional testing

#39. How is testing used during the Detect stage of cybersecurity efforts?

- a. To confirm identification, categorization and prioritization of data and processes
- b. To analyze each asset category and verify the controls in use
- c. To demonstrate the ability to provide fast analysis that can be used for further actions
- d. To verify the speed and extent of recovery to operational status

#40. White-box testing is designed to test the cybersecurity of a system against what type of threat?

- a. Attack by someone with inside knowledge of the system
- b. Attack by someone outside the organization
- c. Attack by a process that has been put into the system via a virus
- d. Attack by the “blue team”

#41. Black-box cybersecurity testing is designed to detect issues that might occur when a threat attack is conducted by a person with what type of relationship to an organization?

- a. An employee
- b. The Chief Information Security Officer
- c. An external person with no relationship
- d. The selected security testing company

#42. How do user guides help a tester target usability testing?

- a. They explain the day-to-day activities of the user
- b. They provide an explanation of the data required to complete a transaction
- c. They explain how the user should deal with error recovery
- d. They provide information regarding the expected performance of the system

#43. At what point in the usage of the software is a user’s perception evaluated for user experience testing?

- a. Only during use
- b. Only after use
- c. Only before and after use, but not during
- d. Before, during, and after use

#44. Which of the following is the most complete set of users targeted by accessibility testing?

- a. Those with disabilities

- b. The blind and hearing impaired
- c. Those who are expected to have difficulty using the target software
- d. Everyone who is likely to use the software

#45. A description of the “appropriateness recognition” characteristic of usability can be found in which of these documents?

- a. ISO 25010
- b. Section 508
- c. WCAG 2.0
- d. ISO 9241-210

#46. “Is the software easy for the user to operate and control” is covered by which usability characteristic?

- a. Appropriateness recognition
- b. Learnability
- c. Operability
- d. User error protection

#47. When the anticipated usage for software is not known, what type of testing should be used for sampling the UI?

- a. Depth
- b. Breadth
- c. Width
- d. Height

#48. Which of the following is an advantage of providing users with general tasks to complete rather than detailed scripts during usability testing?

- a. The user will exercise the error recovery more often when given only general tasks
- b. The experimentation of the user can be recorded to create the user guides
- c. The user will be allowed to exercise their initiative and will likely uncover more defects this way
- d. The experimentation of the user will show how easily tasks can be accomplished

#49. You are working on a project that is building software to be used to register for online income tax filing in the United States. Which of the following defines the accessibility requirements to which the software must conform?

- a. ISO 25010
- b. Section 508
- c. WCAG 2.0
- d. ISO 9241-210

#50. Why is it difficult to define user expectations for connected devices?

- a. Because users do not know what they want
- b. Because the user group can be quite large with varying expectations
- c. Because there is little flexibility in connected devices to cater to user expectations

- d. Because users have different expectations for each connected device

#51. When should interoperability requirements be identified in the software development lifecycle for a connected device application?

- a. At the beginning of the project
- b. When the requirements are being reviewed by the users
- c. During design
- d. During coding and checked during testing

#52. You are testing software that controls temperature adjustments on refrigerators that are connected to the Internet. This software will work on a wide range of refrigerators and all need to be tested. If available, which is the best tool to use to accomplish this testing?

- a. An emulator
- b. A simulator
- c. Real devices
- d. Real devices in the cloud

#53. What makes usability testing difficult in the connected device world?

- a. Users do not know what they want
- b. Users are not available to conduct the testing
- c. Users do not understand that performance will vary based on connectivity
- d. Users have varying expectations and planned usages

#54. In a lightweight testing approach, which of the following is a true statement regarding test cases?

- a. They must be detailed to fill in the gaps where the requirements are incomplete
- b. Testing techniques such as BVA, EP, and decision tables should be used to generate the test cases
- c. Step-by-step test cases are not needed but repeatable tests are needed
- d. Exploratory testing should be the only testing technique used because it will be faster

#55. You are conducting interoperability testing on a range of connected devices. Time is limited for the testing but compatibility with the range of devices is critical. You need to reduce the test set in order to complete the testing on time. Which of the following testing techniques should you use?

- a. Boundary value analysis
- b. Decision tables
- c. Combinatorial testing
- d. Exploratory testing

#56. Why should security testing occur throughout the development of a connected device product?

- a. Because security is difficult, if not impossible, to add on after development is complete

- b. Because developers won't design software that is secure
- c. Because the software might be used in a safety critical application
- d. Because users don't have a clear understanding of what security is and what is needed

#57. What is particularly challenging in conducting reliability testing for an application running on a connected device?

- a. The time required for the testing is long and the testing cycles tend to be short
- b. It is difficult to cause a failure on a stable device such as a smart phone
- c. Reliability testing cannot be done, so the developers have to build reliability into the software
- d. Users expect extremely high reliability and will discard an application that does not have it

#58. Which of the following is a benefit of DevOps?

- a. DevOps projects need fewer people from all roles than traditional projects
- b. Test automation is made easier because it grows incrementally
- c. Early feedback is enabled with small, frequent releases of working code
- d. The need for a test team is replaced with test automation

#59. What is the primary goal of testing during planning in a DevOps project?

- a. To plan the testing early so that it can be executed efficiently
- b. To define testable acceptance criteria
- c. To start test automation during development
- d. To build test automation hooks into the software

#60. Which of the following statements is true regarding a DevOps environment?

- a. Continuous integration requires continuous deployment
- b. Continuous testing requires continuous integration
- c. Continuous delivery requires continuous integration
- d. Continuous deployment requires continuous monitoring

#61. Which of the following is the proper order of the stages in the DevOps pipeline?

- a. Plan > Design > Code > Staging > Deploy
- b. Design > Build > Test > Staging > Deploy
- c. Code > Deploy > Test > Staging > Maintenance
- d. Plan > Code > Build > Staging > Deploy

#62. What is the primary purpose of infrastructure as code in a DevOps environment?

- a. To be able to create the test and production environments by executing scripts
- b. To be able to deploy the completed software to the production environment
- c. To be able to monitor the production environment for any performance or security issues
- d. To be able to modify live production environments without impacting the users

#63. Why is performance testing often conducted during staging in a DevOps environment?

- a. Because this is the first opportunity to run any type of performance testing

- b. Because this is usually the first time it can be run in an environment that is representative of production
- c. Because DevOps processes encourage performance testing to be started late in the SDLC
- d. Because testing resources have completed the other testing at this point and can concentrate on performance testing

#64. You are working on a DevOps project and are implementing continuous testing as part of the overall continuous integration and deployment. What will you need to make continuous testing viable?

- a. A lot of manual testers
- b. Well documented regression tests
- c. A test automation tool set
- d. Stable and completed software

#65. You are using tools in a DevOps project that manage the environments, support requirements engineering, scan source code, build and execute test automation, and assist with deployment. What is the term normally associated with these tools?

- a. Tool box
- b. Toolchain
- c. DevTools
- d. Pipeline