

**ASTQB Certified Tester  
Test Automation Engineering  
Sample Exam Questions**



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American Software Testing Qualifications Board

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**63 points possible. 41 points to pass. 90 minutes.**

**1. Which of the following is a disadvantage of test automation?**

- a. They are less subject to human error during execution
- b. They execute faster than manual tests
- c. They always verify exactly what they were programmed to verify
- d. They can execute more complex tests more reliably

**2. Which of the following characteristics of Agile software development allows the team to cover all test levels with the appropriate amount and depth of automation?**

- a. The right tools
- b. The right training for the test automation engineers
- c. The elimination of silos within the team
- d. The early publishing of completed requirements

**3. You have a highly technical test automation team with all engineers being adept at coding in a wide set of languages. Which of the following would be the best tool to use for implementing test automation for the SUT?**

- a. Full code
- b. Commercial off-the-shelf (COTS)
- c. Open-source
- d. A tool based on the same code as the SUT

**4. How does observability in the SUT help with test automation development?**

- a. The TAE can watch the code while it executes
- b. The automation software can access interfaces that will let it determine if the expected results have been achieved
- c. The automation software can access controls such as function calls, to drive the software and verify results
- d. It makes the components and their interfaces more clear and easier to understand

**5. Which environment should be used to run performance testing in order to obtain the most accurate results?**

- a. Local dev
- b. Build
- c. Integration
- d. Staging

**6. Which environment is best suited for running automated API tests?**

- a. Local dev
- b. Build
- c. Integration
- d. Staging

- 7. You are working on a new test automation project. The developers have implemented a CI/CD pipeline with automatic generation of environments as needed. Everyone agrees that it would be best if the test automation code was executed automatically as the code passes through the pipeline. How does this affect your approach to the automation implementation?**
- a. Automated reporting will be critical
  - b. You will need a tool that integrates easily and uses similar technology to the SUT
  - c. Environment setups will need to be tested prior to the execution of any test automation as they are being generated from code
  - d. There will be no need for a test architect since the developers have already implemented CI/CD and the automation code just needs to comply with the pipeline rules

**8. You have done the following tool comparison:**

	<b>Tool A</b>	<b>Tool B</b>	<b>Tool C</b>	<b>Tool D</b>
<b>Record/Playback capability</b>	<b>O</b>	<b>O</b>	<b>O</b>	<b>X</b>
<b>Integrates with CI/CD pipeline</b>	<b>O</b>	<b>P</b>	<b>P</b>	<b>O</b>
<b>API automation</b>	<b>O</b>	<b>X</b>	<b>P</b>	<b>O</b>
<b>Mobile capability</b>	<b>X</b>	<b>O</b>	<b>O</b>	<b>P</b>
<b>Source</b>	<b>COTS</b>	<b>COTS</b>	<b>Open Source</b>	<b>Open Source</b>

**O = out of the box functionality**

**P = functionality can be implemented with programming**

**X = functionality is not available**

**You have assigned the following importance to these areas:**

**Record/Playback – nice to have**

**Integrates with CI/CD – nice to have**

**API automation – must have**

**Mobile – nice to have**

**Source – open source preferred**

**The team who will use this tool has strong programming skills.**

**Given this information, which is the best tool for your organization?**

- a. Tool A
- b. Tool B
- c. Tool C
- d. Tool D

**9. In which part of the test automation design should you find the interface to the test management software?**

- a. In the gTAA
- b. In the TAA
- c. In the TAS
- d. In the SUT

**10. Which is the correct ecosystem in which the test automation runs?**

- a. TAF
- b. TAS
- c. TAA
- d. gTAA

**11. Which of the following elements of the TAA support connecting to the SUT via APIs?**

- a. Test generation
- b. Test definition
- c. Test adaptation
- d. Test execution

- 12. You have inherited a set of test automation that was developed over several years by multiple test automation engineers. You have found that the framework is very complicated with the same page and flow models incorporated into multiple scripts. Scripts that access page models for different SUTs are all mixed together in one directory. It also appears that generic user actions have been implemented into multiple scripts. What is the proper pairing between these items and the TAF layers?**
- a. Page and Flow models to the Business Logic Layer, generic user actions to Core Libraries Layer, the remaining script code to Test Scripts Layer
  - b. Page Models and generic user actions to Core Libraries Layer, Flow Models to Business Logic Layer
  - c. Test Scripts to the Test Script Layer, SUT specific code to the Test Adaptation Layer, anything called multiple times to the Core Libraries layer
  - d. Logging and Reporting to the Business Logic Layer, API and Database tests to the Core Libraries, Core Library calls to the Test Script Layer

- 13. You have just started a new job with a company that builds application software. Your manager knows nothing about test automation but likes the idea. He has requested a demo of some test automation on one of their applications in production. He would like to have the demo at the end of this week. You have explained to him that you can put together a quick demo, but that developing real maintainable test automation will take longer. Given this information, what approach would be the most cost effective and expedient to create the demo?**
- a. Capture/playback
  - b. Structured scripting
  - c. Data-driven testing
  - d. Behavior-driven development
- 14. (2 pts). You have been maintaining a Test Automation Solution (TAS) and you are finding that you are frequently needing to change the test cases when one of the objects on a page in the UI changes. Because the objects are used by multiple tests, one changed object can result in needing to modify multiple tests. This is taking a considerable amount of time each time the team receives a new code drop from the developers. What design principle should you apply when refactoring the code to make it more maintainable?**
- a. The SOLID principles
  - b. Design patterns
  - c. Page object pattern
  - d. Flow model pattern



- 15. You have been assigned to a new test automation project. The developers are using Java with Spring Boot in their deployment pipeline. They would like to see the automation using the same tools, particularly for the deployment and execution of the tests. Given this information, what is a primary consideration you need to have when building the team?**
- a. How many people will you need
  - b. Can you find the people you need with the specific programming skills
  - c. Which test levels will be targeted by the automation
  - d. Where should the team members be located
- 16. You have developed a full suite of test automation for a new mobile application. This involves using physical devices for the tests. This has worked well, but you are concerned with future maintenance requirements. Which of the following is an area that should be considered with this approach?**
- a. License cost of the devices
  - b. Simulator installation responsibility
  - c. OS upgrades for the physical devices and retesting/test updates as needed
  - d. Acceptance testing using the physical devices versus using simulated devices to gain user approval

**17. Which of the following is a maintainability issue with some record/playback tools?**

- a. The user interface is difficult to use
- b. The logging is burdensome
- c. The coverage is usually inappropriate
- d. The data is hardcoded

**18. What is the purpose of using static analyzers on test automation code?**

- a. They shouldn't be used for test automation code
- b. To ensure a higher quality of the code by checking for coding standards
- c. To optimize the code for faster execution
- d. To find and eliminate any global variables

- 19. Your organization is using a modern continuous integration system which differentiates between the build and deployment phases of the continuous delivery pipelines. The developers have implemented some testing in the build pipeline and that seems to be working, but you are seeing frequent issues with transaction workflows that are either missing or not implemented correctly. You have now developed tests to cover the problem scenarios. How should this testing be implemented in the pipeline?**
- a. It should be implemented as integration tests in the continuous integration pipeline
  - b. It should be implemented as component integration tests in the continuous deployment pipeline
  - c. It should be implemented as system tests in the continuous deployment pipeline
  - d. It should be implemented as component tests in the continuous integration pipeline
- 20. You are developing performance efficiency tests to combat production issues with slow performance, particularly with any reporting transactions. Where should these be implemented in a CI/CD environment to provide the earliest quality gate?**
- a. In the continuous integration pipeline
  - b. In the continuous deployment pipeline
  - c. After the deployment, in the test environment
  - d. After the deployment, in the production environment

**21. How are test environments influenced by configuration management?**

- a. Environments are only accessed through the configuration management software
- b. Environments are secured and security tested when added to configuration management
- c. Environment configuration and access information can be stored in configuration management
- d. Environment access is controlled by the configuration management system and software

**22. What is the primary purpose of using a feature toggle in testware?**

- a. To reduce cost of maintaining the test cases
- b. To allow execution of certain tests depending on the setting of the toggle
- c. To be able to bypass tests that are failing due to a defect
- d. To provide more explicit test reporting information based on the toggle setting

**23. Why is it important to understand the APIs connections?**

- a. Developers will be coding according to these requirements
- b. Performance testing is dependent on understanding each API connection
- c. This is where the tester will find the documentation regarding the required parameters
- d. The business logic is controlled through the API connections and their relationships

**24. What is the purpose of a contract between services?**

- a. It defines how the provider will supply services to the consumer
- b. It defines who has access to which data for security purposes
- c. It defines how a service signs on and off the system
- d. It defines the expected speed of transactions and allows that to be tuned up or down as needed

- 25. You have created a test automation suite that is testing critical functionality in a new system. It is finding a significant number of defects. You have repeatedly shown your output logs to your manager, but he is not understanding that most of the test cases are failing. What should you do to enhance your logs to make them more understandable?**
- a. Nothing. Get a new manager.
  - b. Ensure the start and end of every test is logged and presented in bold font
  - c. Add color to the results showing red for failures and green for passes
  - d. Add screen shots for all the failures
- 26. You have a test automation suite that is encountering a failure. You have investigated the logs, but you can't see where it's failing. You've tried running the tests manually and they work without a problem. What other information should you capture in your scripts to help debug the problem?**
- a. Screen shots at the point of the failure
  - b. Lines of code executed
  - c. Equivalent manual testing hours saved
  - d. Number of executions with pass/fail information

**27. You are working on a Customer Relationship Management (CRM) system that uses a third-party address lookup to help the user when they enter an address. This also ensures that only valid addresses are entered into the system. Unfortunately, you are finding that addresses in one state are always failing – Kansas. You can't see any problems in the test automation code, and you have determined that there are no data or formatting errors in the failing addresses. You have tried the same test manually and you get the same failure.**

**Given this information, what should you do next?**

- a. You should run the code under the debugger to be sure there are no errors occurring
- b. You should contact the third-party vendor and log an incident with information regarding the failed addresses
- c. You should capture screen shots of the failure
- d. You should ensure that the addresses being entered are valid addresses

**28. Who should receive a copy of a test progress report?**

- a. Only the testers until the software is ready to release
- b. Management, but only if there is an issue they need to resolve
- c. All stakeholders who have a need and/or interest in the testing
- d. No one – this information should only be tracked in a dashboard that is accessible to the technical team members

**29. You have found that the TAS requires different components depending on the deployment environment. This includes such items as URLs being different, different test data and the use of mocks and stubs. What should you do to make the TAS easily installed in the different environments?**

- a. Ensure all the components are under configuration management with clear versioning and environment requirements
- b. Create a different TAS for each unique environment and maintain each of them as separate entities to avoid deployment issues
- c. Provide the developers with links to the different environments so they can deploy the TAS for you in the various environments making whatever changes are required during the deployment effort
- d. Reduce the use of different test environments and instead just use different versions of the TAS to simulate different environments

**30. You are working on a new TAF, and you are getting some interesting results. When the tests are run under the TAF, they are noticeably slower than when they are run manually. This happens right from the beginning of execution and stays slow throughout. What is a likely cause of this problem?**

- a. There is not enough logging, more should be added for better troubleshooting
- b. The SUT is not adequately provisioned for the proper performance level
- c. The data being used by the test automation is making the tests take too long and should be reduced in size
- d. The TAF is affecting the performance for some reason, more timing information may be needed, but there may be too much logging already occurring



- 31. You have been running a set of 10 tests, but you are getting inconsistent results from the tests. What type of “correct” behavior is missing?**
- a. Repeatability
  - b. Intrusion
  - c. Composition
  - d. Visibility
- 32. What do you check when you are checking for completeness of a test automation suite?**
- a. All tests pass
  - b. Approximately 10% of the tests fail consistently
  - c. The test data is correct and available
  - d. The tests are repeatable across different SUT versions
- 33. Which of the following would be sufficient to determine that an action has actually occurred?**
- a. Add a user and verify that the user can no longer log in
  - b. Add a user and then delete that user
  - c. Add a user, delete the user, add the user again
  - d. Add a user and verify in the database that the user exists

**34. Which of the following is a benefit from using a static analysis tool?**

- a. The code will run faster
- b. The code will have extensive logging
- c. The developer will be given suggestions for fixes to problems
- d. The tool will automatically generate defect reports for any found problems

**35. You are having repeated failures with the automation every time a new version of the SUT is released. You have done analysis and discovered that the majority of problems are due to issues with the API response elements changing. What is a cost-effective and time-saving approach that you can implement to deal with this issue?**

- a. Implement mocks and stubs for the services being called via the APIs and use those in your test automation
- b. Develop your own APIs to call the services and code your automation to use your own controlled APIs
- c. Implement contracts for the APIs and test via the contracts
- d. Get a schema validation tool that will check that the APIs comply to the requirements

- 36. You have been reviewing the test automation suite and have found that at least 40% of the code is reused more than twice. What should you do to improve the maintainability of the test suite?**
- a. Delete the duplicated code
  - b. Create a library in the framework and store the common code there, then update the individual scripts to call the library code modules as needed
  - c. Run a schema validation to ensure the code is accurate and the data is being handled correctly
  - d. Use static analysis to ensure the re-used code is clean and efficient
- 37. You have a test automation suite for a health care application. This application interfaces with a number of external systems via APIs. You have found that the APIs don't necessarily return the right codes when a request times out and you're finding that your automation is getting stuck as you are checking for specific values. In addition to reporting this as a defect, what should you do to make your automation more robust?**
- a. Ensure that there are waits and timeouts coded in your automation to avoid an eternal wait
  - b. Stop testing as this is a fundamental defect and invalidates any further tests
  - c. Terminate your test when the wait exceeds five seconds as this is adequate time for a response
  - d. Wait until you get a response because continuing on would not make sense for the test

- 38. You have a need for your test automation scripts to comb through the SUT system logs looking for specific values. Currently that check is coded into each script because each script is seeking different information. How should this be implemented to reduce maintenance?**
- a. The logs should be checked manually because that will be more flexible and will require no maintenance
  - b. The values checked should be compiled together so the search will always be for all values
  - c. A new reusable function should be developed that can accept data values passed from the test script which will search the log for those specific values
  - d. A unique function should be developed for each value so that the precise function can be called by the appropriate test script

**39. One of the test automation engineers has built a function for handling GUI components. This function takes the control ID, control type and the action as input parameters and then it executes the action on the specified control. The TAE says all common controls (buttons, check boxes, text boxes, drop downs, etc.) have already been added, but more controls can be added easily to this function. He also pointed out that it will be available for any test automation script that needs to access a particular control. Is this a good approach?**

- a. No, it is better for a function to deal with only one type of control at a time, such as one for buttons and another for drop down lists
- b. No, this function will require considerable maintenance as the GUI adds more pages
- c. Yes, this is an example of a good practice that will put common code into one function that can be maintained in one place but used by many test automation scripts
- d. Yes, this function will be easy to extend as more individual buttons, dropdowns and text boxes are added to the GUI assuming these will all behave in an expected manner for their control type

- 40. You have been asked to develop test automation for a system that has no documented requirements and no existing test cases. You do have access to the business users of the system. How could test automation be used to help you determine what you need to automate?**
- a. a. The business users could use the record/playback capability to record what they do, and you could then use those recordings as examples to develop maintainable test automation code.
  - b. You could use the tools to prepare test data for the users
  - c. A test automation script could be used to configure the test environment
  - d. The developers could use the TAS to define their solution and could implement their code in the TAF which would let you develop the test automation solution from the SUT source code

# **Bonus from 3.1.5** You are reworking a TAS to accommodate changes made to the SUT. You have found that the test automation engineer who wrote most of the test scripts used a record/playback tool to find all the UI components on each page to be tested. The objects were then directly referenced from the scripts that used the components. You noticed this problem when you needed to update the test automation scripts because the “gender” radio buttons had to be changed to a drop-down list. This required changes on multiple pages for this web application.

**What design approach should the previous TAE have used to make this code more maintainable?**

- a. Flow model pattern
- b. Page object pattern
- c. SOLID principles
- d. Object-oriented programming principles

# **Bonus from 3.1.5** You are currently using a page object model approach for your test automation for a mobile banking application. This has significantly helped the maintenance effort, but you are still spending time fixing scripts that cover common user transactions such as login and check account balance. What would be the best design approach to reduce the time you are spending coding transactional workflows?

- a. Flow model pattern
- b. Page object pattern
- c. SOLID principles
- d. Object-oriented programming principles