

## Topic 1 - Exam A

### Question #1

Topic 1

You are working as a TAE for a company who have been using a web test execution tool for a number of years. The tool has been used successfully on ten web applications in the past.

The company are developing a new web application which has a friendly User Interface, but the developers have used an object throughout the application which the tool is unable to recognise. As a result, you have no way of capturing the object or verifying the contents using the automation tool.

What is the first thing you should do about this problem?

- A. See if the application can be run on a desktop and if the object can be recognised on the desktop by the tool.
- B. Investigate whether the object can be recognised by other test execution tools in the market
- C. Ask the developers to remove the object and replace it with some text fields
- D. Ask the developers if they can change the object to something that can be recognised by the tool

[Reveal Solution](#)[Discussion](#) **10**

### Question #2

Topic 1

A major component of your organisation's Test Automaton Solution (TAS) is a popular open-source third-party capture-replay tool for automated functional testing. Which two of the following must the Test Automation Engineer (TAE) ensure happens for this TAS? a) The third party tool is placed under configuration management control. b) The annual support and maintenance costs are agreed with the tool's vendor. c) It is Important to obtain information about updates and new versions of the tool so that the third party tool is kept up to date. d) Ensure that the TAS test scripts are integrated into the tool's framework. e) Ensure that no changes are made to the tool, because modifications are not allowed for third party products.

- A. a and b
- B. c and d
- C. a and c
- D. d and e

[Reveal Solution](#)[Discussion](#) **5**

### Question #3

Topic 1

If model-based testing has been selected for the overall test automation approach for a project, how does that influence the layers of the TAA?

- A. All layers are used, but the test generation layer will be automated based on the defined model
- B. There will be no need for the execution layer
- C. No adaptation will be needed because the interfaces will be defined by the model
- D. There will be no need to design the tests for the API because those will be covered by the model

Reveal Solution

Discussion 1

#### Question #4

Topic 1

Your functional regression test automation suite ran successfully for the first two sprints and no failures were encountered during the runs. The automation suite records the status of each test case as either 'pass' or 'fail' and has excellent recovery capability built in.

For the third sprint, the TAS log reported several test cases with a status of 'fail'. You investigated each test case and found that most failures were due to a defect in one of the keyword scripts, rather than in the SUT. For those where the failure was in the SUT, defect reports were raised but several were returned by the developers asking for more information to enable them to reproduce the problem.

Which additional log items SHOULD you add to the TAS that would BEST improve failure analysis and defect reporting for future sprints? a) Dynamic measurement information about the SUT. b) A status of 'TAS error', in addition to 'pass' and 'fail', for each test case. c) Use of a colour coding scheme so that 'pass' is in red and 'fail' is in green. d) A counter to determine how many times each test case has been executed. e) System configuration information including software/firmware and operating system versions. f) A copy of the source code for all Keyword scripts executed.

- A. a and b
- B. d and e
- C. a and c
- D. b and e

Reveal Solution

Discussion 11

#### Question #5

Topic 1

Your TAS has been running successfully on a Windows/GUI based SUT for some years. The SUT has undergone minimal change over the years to maintain business as usual, deploying six-monthly releases for minor enhancements and bug fixes using a waterfall lifecycle.

The TAS has not changed at all during this period. The current project for the SUT will be using the Scrum methodology to deliver a more modern, competitive, user interface. It is in the release planning stage with an agreed release backlog and set of sprints outlined.

The move from lengthy waterfall releases to shorter sprints has led you to conduct a review of the current TAS to make sure it is robust and fully optimised for the timescale challenges of the new project.

What two steps would be BEST to undertake during the review?

a) Ensure that new automation code is using the same naming conventions as existing code. b) Perform a full regression run in Sprint 1 to identify what improvements

could be made to the TAS for future sprints. c) Ensure that the TAS is using the latest libraries for the operating system. d) Review the functions that act upon the controls for the GUI for possible consolidation. e) Involve the test team to see what ease-of-use improvements they would like to see made to the TAS.

- A. c and d
- B. b and c
- C. a and b
- D. d and e

Reveal Solution

Discussion 2

#### Question #6

Topic 1

You are working on a government system called "Making Tax Digital" or MTD for short. This system is being implemented to stop manual human input error and also to reduce fraudulent behaviour from companies when submitting their tax and VAT returns.

The key concept is that registered companies will need to use government recommended 3rd party software for their accounts and book keeping. These 3rd party applications will have a direct interface into the government's main system for transactions and submissions.

You have been using a test execution tool successfully on the project so far, and have implemented a basic "capture/replay" approach to scripting.

The management have been encouraged with the automation so far, but want the following objectives to be met:

- Test cases added easily
- Reduction in the amount of scripts and script duplication
- Reduction in maintenance costs

Which scripting technique would be MOST suitable in this scenario in order to meet the objectives?

- A. Linear scripting
- B. Structured scripting
- C. Data-driven scripting
- D. Keyword-driven scripting

Reveal Solution

Discussion 3

#### Question #7

Topic 1

The Test Automation Manager has asked you to provide a solution for collecting metrics from the TAS that measures code coverage every time the automated regression test pack is run. The metrics must be trend based to ensure that the scope of the regression test pack continues to reflect enhancements made to the SUT - coverage must not drop and should ideally increase. The solution must be as automated as possible to avoid unnecessary manual overheads and errors.

Which of the following approaches would BEST meet these requirements?

A. Test automation cannot measure code coverage for the SUT, only the code for the automation tools and scripts. The automated test cases would need to be run manually with a code coverage and reporting tool running in the background.

B. The automated testware would record overall code coverage for each run and add the figure to a new row in a pre-formatted Excel spreadsheet. You would then present the spreadsheet to stakeholders so they could look for changes in coverage.

C. The automated testware would record overall code coverage for each run, export the data to a pre-formatted Excel spreadsheet that automatically updates a trend analysis bar chart for you to distribute to stakeholders.

D. The automated testware would record the pass/fail rate of each regression test case, export the data to a pre-formatted Excel spreadsheet that automatically updates a trend analysis success rate bar chart and emails it to stakeholders.

[Reveal Solution](#)

[Discussion](#) **1**

#### Question #8

Topic 1

Which of the following is considered a disadvantage of test automation?

- A. Automated exploratory testing is difficult to implement
- B. Test automation can be a distraction from the objective of finding bugs
- C. Tests are more likely to have operator errors.
- D. Slower feedback on the quality of the system.

[Reveal Solution](#)

[Discussion](#) **3**

#### Question #9

Topic 1

New features have been added for the current release of a SUT.

Which action would NOT be appropriate for the TAE to perform when evaluating the impact on the TAS?

- A. Gather feedback from the Business Analysts to determine if the current TAS will meet the needs of the new features.
- B. Review existing keywords to see if they need to be modified.
- C. Run existing automated tests against the updated SUT to verify and record any changes to their correct operation.
- D. Evaluate compatibility with existing test tools and, where necessary, identify alternative solutions.

[Reveal Solution](#)

[Discussion](#) **2**

#### Question #10

Topic 1

You are implementing test automation for a project that has a business critical application. A test execution tool is being used to run automated regression tests. The results from the test execution tool are very important and need to be 100% accurate.

You want to merge the test automation results with the test management system that also records the manual test results so that managers can make informed decisions about the progress quickly.

Which layer of the gTAA will be used to ensure the proper reporting occurs and the interfaces to the test management system are handled?

- A. The reporting layer
- B. The logging layer
- C. The execution layer
- D. The adaptation layer

Reveal Solution

Discussion 6

#### Question #11

Topic 1

Which of the following describes how a test execution report is likely to be used?

- A. To understand which test step caused the failure in a test case
- B. To identify problematic areas of the SUT by keeping a history showing which test cases fail the most
- C. To measure coverage of the test basis by a test suite
- D. To record how a test case failure has been fixed

Reveal Solution

Discussion 3

#### Question #12

Topic 1

What is the PRIMARY advantage of using abstraction in the TAA?

- A. It makes it more flexible for future reuse and improvements
- B. It requires a higher skill level to implement
- C. It ensures that any scripting method will be supported
- D. It improves the performance of the TAS

Reveal Solution

Discussion 1

As the TAE, you are working with the organisation's Test Manager to decide which external metrics and which internal metrics should be gathered for the new TAS. Which of the following represents the BEST internal metric that would help measure the quality of the TAS and the number of problems associated with the TAS?

- A. The average maintenance cost to keep an automated test in sync with the SUT
- B. The number of hours of manual test effort saved by implementing a TAS
- C. A measure of defect density within the TAS automation code
- D. A measure of how many automated tests pass and fail

[Reveal Solution](#)[Discussion](#) **1**

You are evaluating several test modelling tools and are wanting to automatically generate test cases within the tool where many different combinations of input data are created.

You are then wanting to export the test cases into a csv file which can then be read by a functional test execution tool using a data-driven or keyword-driven scripting method.

You have investigated several tools and there is only one tool that provides all the necessary features defined by your team with the exception of the export facility. It does not provide an export into either .xls or .csv formats.

What would be the BEST next step regarding the selection of this tool?

- A. Consider another tool that is more "fit for purpose" and has all the features required.
- B. Explore the possibility of creating your own export facility.
- C. Ask the vendor and use forums to see if a solution is available or going to be available in the future.
- D. Purchase this tool and generate the .csv file manually.

[Reveal Solution](#)[Discussion](#) **1**

You are testing a major enhancement to an air traffic control user interface. You have use of a sophisticated pre-production test environment, created specifically for large scale automated regression, performance and security testing. The window for regression testing is limited and must successfully conclude, with no major regressions remaining, before the non-functional testing starts.

You have been using the same version of the TAS for the last few releases, each time completing the automated regression test suite in a single overnight run. However, due to the latest enhancements for the SUT, you believe there is a risk that the test suite may no longer complete overnight and therefore delay performance and security testing.

Which option would be the BEST and MOST cost-efficient approach to mitigate this risk?

- A. Create a mirror of the pre-production test environment and split the regression test suite to run in parallel across the environments.
- B. Split the regression test suite into multiple parts, running in the environment across consecutive nights.
- C. Analyse the regression test suite and remove test coverage duplication and redundancy.
- D. Introduce better coding practices for the automation scripts, including coding guidelines, reviews and improved static analysis.

[Reveal Solution](#)

[Discussion](#) **2**

Question #16

Topic 1

If you are tracking the frequency that a test automation code reports a defect that is not really a defect, what metric are you gathering?

- A. Tool scripting metrics
- B. Automation code defect density
- C. Trend metrics
- D. The number of false-fail results

[Reveal Solution](#)

[Discussion](#) **2**

Question #17

Topic 1

You are planning the pilot for an in-house developed Test Automation solution (TAS).

Which two of the following would be important steps to take as part of the planning process? a) Review your organisation's current projects and identify which one would be most suitable to pilot the TAS. b) Ensure that the developers will provide the necessary commitment for the TAS deployment activities. c) Run a series of training workshops for new users of the TAS before they are asked to use it. d) Develop a project plan for the pilot and reserve the necessary budget and resources for its implementation. e) Ask the developers to provide any missing functionality during the deployment activities.

- A. a and b
- B. b and d
- C. c and d
- D. c and e

[Reveal Solution](#)

[Discussion](#) **2**

Question #18

Topic 1

When the SUT provides insight into the behaviour of the system, providing the users with the status of the various actions performed so that they can check that expected behaviour equals actual behaviour, what is this called?

- A. Portability.
- B. Maintainability.
- C. Observability.
- D. Controllability.

[Reveal Solution](#)[Discussion](#) **1**

You are a TAE working for a software house which provides quarterly releases of its software to its customers. There are many different versions of the SUT that need to be tested simultaneously by different test teams.

Your TAS is complex and you need to ensure it remains consistent across the different SUT environments. What is the BEST and MOST efficient way to ensure each of the test teams use the same version of the TAS to test the different versions of the SUT?

- A. Due to the complexities involved and the high risks associated with these releases, it would be best to revert to manual testing.
- B. Produce comprehensive documentation of the TAS, installation and usage guidelines and provide training for each team member.
- C. Install the TAS in a central repository and have an automated installation and configuration of the TAS from this repository to each of the SUT environments.
- D. Develop a tool to track historical test results across the different SUT environments and look for trends.

[Reveal Solution](#)[Discussion](#) **1**

You are implementing test automation for a project and you want to be able to generate test cases automatically using a series of test design tools which use a variety of test design techniques such as decision tables, pairwise testing and boundary value analysis.

You also want to generate test data automatically which can then be used by the tests.

Initially these tests will be run manually to verify their correctness and ultimately you want to include them in the test execution tool so that they can run unattended.

Which layer of the gTAA will be used to support the specification of the test cases and preparation of the test data?

- A. The generation layer
- B. The definition layer
- C. The execution layer



D. The adaptation layer

Reveal Solution

Discussion 2

#### Question #21

Topic 1

You have been asked to implement test automation for a project that is not meeting its deadlines. After further analysis you discover that the manual testers are not able to keep up with the new feature testing because the regression testing is taking 75% of their time. As a result, the new features are being released with many defects and customers are complaining about the quality.

Given this information, what metric SHOULD you be tracking to show the value of test automation for this project?

- A. Percentage of code covered by the test automation.
- B. Equivalent Manual Test Effort for the automated tests.
- C. Number of defects found by test automation.
- D. Percentage of builds accepted/rejected by the automated tests.

Reveal Solution

Discussion

#### Question #22

Topic 1

Which of the following is an important success factor for any significant automation project?

- A. The TAA must be designed for testability.
- B. The TAA is self-documenting
- C. The SUT must be designed for testability
- D. The SUT is self-documenting

Reveal Solution

Discussion 1

#### Question #23

Topic 1

Which of the following CORRECTLY describes how automation SHOULD be applied to confirmation testing?

- A. Confirmation tests are not good candidates for automation as they are not designed to run many times
- B. Confirmation tests should only be automated if they fail to pass on the first attempt

C. Confirmation tests can be automated and incorporated into an automated regression suite to show whether defects that were previously fixed reoccur

D. A confirmation test should only be automated after it has been run manually

Reveal Solution

Discussion 1

#### Question #24

Topic 1

You have inherited a TAS that is working well it uses keyword-driven scripting and was well architected. The automation architect who built the system has now moved on to another company. The TAS is working across several projects and has a multiple library of keywords, categorised by project. The individual project teams maintain these keyword scripts.

Based only on the given information, what is the MOST significant risk for the TAS?

- A. The keyword driven scripts may become out of date if not maintained
- B. The level of abstraction, coupled with the departure of the architect may make the system hard to maintain
- C. New projects may not work as well with the TAS as the current projects
- D. Because the keyword scripts are maintained by different teams, there is a likelihood that good coding standards are not followed

Reveal Solution

Discussion

#### Question #25

Topic 1

Your company is new to test automation and as TAE. you have designed a TAS which successfully supports the SUT for the current project.

There are other systems currently in operation which have been tested manually and more systems are planned over the coming years. Based on this success, your company requires test automation be rolled out to other current and future SUTs with consistency being a key objective.

Which of the following is the BEST way to achieve that?

- A. Design a new TAS for each SUT, and manage each one through a dedicated automation support team.
- B. Install the current TAS into a central repository so that other tests on different SUTs use the same version of the TAS.
- C. Check for correct connectivity to internal and external systems to ensure that the TAS has been installed and configured correctly for each SUT.
- D. Develop a tool that keeps track of automation failures across the different SUTs and produces regular reports to stakeholders.

Reveal Solution

Discussion

Next Questions →

## Question #26

Topic 1

When is the BEST time for automation to consider legal and/or standard requirements for a SUT?

- A. When implementing the SUT
- B. When designing a TAF
- C. When designing a TAA
- D. When developing a TAS

Reveal Solution

Discussion 3

## Question #27

Topic 1

You are implementing a TAS for a system that has been live for over three years, using a hybrid waterfall and agile lifecycle. Live updates are made on a monthly basis. There is no test team, with developers designing and executing unit and integration tests with some degree of automation and business analysts designing and executing manual tests at the system level. No formal test process exists, although the system has proved relatively stable for most of the time. Unfortunately, the last two monthly releases were problematic with regression defects found in production. Your priority is the automation of functional regression tests at the system level, the budget for this has been approved by project stakeholders. The Business Analysts have identified which test cases are most suitable for regression. You must use the organisation's long standing commercial automation tool which has passed a proof of concept in the platform for the system in question. Which of the following suitability criteria needs the MOST attention for the TAS?

- A. Technical planning in support of ROI analysis
- B. Frequency of use.
- C. Compatibility and tool support
- D. Maturity of the test process

Reveal Solution

Discussion

## Question #28

Topic 1

You have implemented a keyword-driven scripting framework, which uses a test execution tool to run the tests. This has been in use for the past year and all of the teams now use this framework as the standard approach for test execution. The teams all work on different aspects of the SUT and they have all experienced significant benefits in the use of this scripting framework. However, on closer examination, you have discovered that there are numerous instances where the teams have the same functionality to test but are using different keywords. One of your objectives for improvement is to create consistency among the teams. What is the BEST way to handle this situation?

- A. Move to a model-based approach to scripting where the models include the keywords.
- B. Do nothing, each team are working in isolation and they are all experiencing significant benefits in the way they are currently working.
- C. Provide each team with a set of guidelines and naming conventions for keywords.
- D. Create a central library of keywords and associated definitions for each team to use.

Reveal Solution

Discussion

Question #29

Topic 1

You are working as a TAE for a company who are re-designing their website. The new website provides information for customers and there are two minor features being developed:

1. Request a newsletter
2. Ability to contact the organisation with a question or comment

The website must be "mobile friendly" and available on all major web browsers.

You have been tasked to provide an automated solution for web browsers only and to concentrate on the two minor features.

What would be a KEY challenge with automation in this context?

- A. A low level of intrusion is likely from use of existing UI elements, but depending on the solution this might be more complex than a higher level of intrusion.
- B. Because there is a high level of intrusion there may be many false alarms.
- C. Automation might not be possible on the mobile devices.
- D. The benefits of automation might not be achieved for many years due to the complexities of the SUT and automation solution.

Reveal Solution

Discussion 1

Question #30

Topic 1

You are the TAE for an Agile project which has six sprints for the current release. Sprint five is underway and the automated regression suite is due to start later today.

You have re-examined the results from the automated regression runs for the past four sprints. You notice that two test cases both reported a pass for sprints 1 and 4 but a fail for sprints 2 and 3. The failures have gone undetected and are therefore unexplained. Both test cases are closely coupled with other tests in the suite.

What course of action SHOULD you take?

- A. Run the regression suite as planned and see if the tests fail again if they do, determine the cause of failure.
- B. Remove the test cases from the regression suite and refer them to the test designer for manual testing for future sprints.
- C. Quarantine the test cases, run the regression suite without them, and perform root cause analysis on the test cases in parallel.
- D. Run the test cases manually now. If they still pass, keep them in the regression suite, if they fail perform root cause analysis.

Reveal Solution

Discussion 3

In order to achieve re-use of a TAS, where SHOULD the design for reuse occur?

- A. At the code level
- B. At the framework level.
- C. At the TAS level
- D. At the TAA level

[Reveal Solution](#)[Discussion](#) 5

You have executed an automated test suite for a product that was released into production. Although all the tests passed, there was a major failure in production in an area that was covered well by your automated tests.

You have run the automated tests again and one of the tests is now failing and this is directly related to the production defect that was raised. You decide to run the automated test suite again on the same version of the SUT and the test now passes.

What SHOULD you do now to verify the validity of the automated tests?

- A. Remove the intermittently failing test from the test suite and investigate the reason why the test sometimes passes and sometimes fails.
- B. Check that the production defect that was reported was an actual defect
- C. Run the automated test suite again and if the test now passes - do nothing
- D. Remove the intermittently failing test from the test suite and re-run the automated test suite again

[Reveal Solution](#)[Discussion](#)

What are the four horizontal layers of the gTAA?

- A. Test adaptation, test execution, test design, test definition
- B. Test generation, test execution, test definition, test APIs
- C. Test generation, test definition, test execution, test adaptation
- D. Test definition, test execution, test reporting, test adaptation

[Reveal Solution](#)[Discussion](#) 2

Your organisation has successfully implemented a Test Automaton Solution (TAS) for a new project which has since been delivered into production via a number of sprints. A series of maintenance releases are now planned.

Some improvements were made to the Test Automation Architecture (TAA) as a result of feedback from the early sprints. The TAA improvements affected the TA, and the TAS was changed for the final sprint.

The new version of the TAS was generally well received but some performance and usability issues were encountered with the TAS which have yet to be addressed.

The test automation engineers supporting the maintenance releases must decide whether to use the enhanced TAS or the version that was used successfully for previous sprints.

What is the BEST action to take next?

- A. Perform an analysis of risks versus benefits for the enhanced TAS and then decide which version to use.
- B. Use the previous version because this was proven to work. It will be too risky to use the new version, with unresolved issues, for a live system.
- C. Use the new version because, despite some issues, it works, and the live system should not be tested using a different TAS.
- D. Use the new version of the TAS for the first maintenance release on a trial basis. If issues are encountered, switch to the previous version for later releases until the issues are resolved.

[Reveal Solution](#)[Discussion](#) 5

What represents good practice when automating a manual regression test suite?

- A. Test data shared between tests should, where feasible, be stored and accessed from a single source to avoid duplication or introduction of error.
- B. All existing manual tests should be decomposed into several smaller automated tests to reduce functional overlap.
- C. Remove inter-dependencies between tests to reduce automation failures and costly error analysis.
- D. Once a manual test has been automated, execute it immediately to identify whether it operates correctly.

[Reveal Solution](#)[Discussion](#) 4

You have investigated a new tool which enables the modelling of the SUT and can then generate test cases either manually or automatically. You have convinced your managers that the best way forward is to conduct a pilot project for this tool. You need to select a project to use for the pilot. You have the choice of the following projects:

Project A: A two-year project that is critical to the business and is currently in the requirement phase. This project is for a new e-commerce web site and is mostly being developed "in-house" although the payment system is being developed and delivered by a 3rd party provider.

Project B: A safety critical application for software to drive and park cars.

Project C: An upgrade to an important HR timesheet tracking application that will be available on a desktop and mobile application. This is a 1-month project developed in-house.

Project D The payment system from project A.

Which project would be BEST for the pilot?

- A. Project A because it is a large project and has high visibility and is in the requirement phase.
- B. Project B because it is a safety critical system and has high visibility.
- C. Project C because it is a short, low priority project but is important
- D. Project D because it is a small part of a larger project and will help show the tool's capabilities.

Reveal Solution

Discussion 2

Question #37

Topic 1

Your project is transitioning from manual to automated testing. You have decided to implement a pilot project so that lessons learned can inform future time estimates and schedules.

Which two of the following represent the types of test cases that are MOST suited to a test automation pilot project? a) High added value test cases that require little effort to automate. b) Test that are run infrequently as these will be simpler to automate c) Reliability test cases that can show added value soon d) Technically challenging test cases to provide the best validation of manual test conversion e) Tests that are least important to the business as these are safer to trial

- A. a and b
- B. a and c
- C. b and d
- D. c and e

Reveal Solution

Discussion

Question #38

Topic 1

You have been asked to develop test automation for a legacy system that is going to go through a series of infrastructure migrations. The scripts will be used to verify basic functionality during these infrastructure changes Your Test Analysts have some programming skills and need a solution that is simple and fast.

Maintainability of the scripts is not a consideration because no changes to the software are anticipated.

Which of the following is the BEST scripting approach in this situation?

- A. Structured scripting
- B. Capture-replay scripting
- C. Model-Based scripting
- D. Linear scripting

Reveal Solution

Discussion

You are working on a web-based application called Book Vault that allows people to upload books and order books. This application must be available on all major browsers.

You have been testing the application manually and management have asked you to consider automating some of the tests.

You have investigated a number of commercial and free tools which can automate tests at a web browser level and one tool in particular meets your requirements and you have implemented a trial version.

You have basic programming skills and the main goal is to automate a few functional tests to see if the tool is compatible with the application and can recognise the objects and controls.

Which scripting technique would be MOST suitable in this scenario in order to meet the objectives?

- A. Structured scripting
- B. Capture-replay scripting
- C. Data-driven scripting
- D. Model-based scripting

[Reveal Solution](#)[Discussion](#)

Which of the following is not an advantage of test automation?

- A. The ability to perform tests which would be difficult or impossible to execute manually
- B. The ability to run more tests in less time and therefore to make it possible to run them more often
- C. The ability to find more defects with the same tests compared to the manual execution
- D. The ability to enable a better use of skilled testers by freeing them from repetitive and boring tasks

[Reveal Solution](#)[Discussion](#)

Assume that you are working on a TAS for standalone desktop applications. The automated tests are developed based on a given automation framework that allows interacting with the application using the GUI elements by means of an object-oriented API. The TAS needs also a tool that allows identifying the properties of these elements. In this tool the root element represents the current desktop and the child elements represent application windows. Each of these child elements contains GUI elements (e.g., menus, buttons, radio buttons, text boxes, toolbars etc.) with their properties. Unfortunately, the elements of two third party components are not identifiable by this tool and thus they cannot be used with the specified framework.

Based only on the given information, which of the following is the first step that you should consider to address such issue in this scenario?



- A. Verify the testability support within the current automation solution with the providers of the third party controls
- B. Verify whether the identifiability issue associated to the third party controls depends on the web browser
- C. Adopt an approach that uses the coordinates of the GUI elements for interacting with the application
- D. Verify whether naming standards for variables and files have been defined for the current automation solution

Reveal Solution

Discussion

Question #42

Topic 1

Which of the following best refers to the characteristic of observability associated with the (design for) testability of the SUT?

- A. The ability of the SUT to perform its intended function for a specified period of time
- B. The ability to exercise the SUT by entering inputs, triggering events and invoking methods
- C. The ability of the SUT to prevent unauthorized access to its internal components or data
- D. The ability to identify states, outputs, intermediate results and error messages in the SUT

Reveal Solution

Discussion

Question #43

Topic 1

You are currently designing the TAA of a TAS. In particular, you have been asked to adopt an approach for automatically generating and executing test cases from a model that defines the SUT. The SUT is a state-based and event-driven system that is described by a finite-state machine and exposes its functionality via an API. Assume also that the behavior of the SUT depends on possibly unreliable hardware or communication links.

Based only on the given information, which of the following aspects would you expect to be most important when designing the TAA in this scenario?

- A. Looking for tools that allow directly denoting exceptions and actions depending on system events
- B. Adopting a test generation strategy based on classification trees coverage for the test generation layer
- C. Looking for tools that allow performing setup and teardown of the test suites and the SUT
- D. Adopting a test generation strategy based on use case/exception case coverage for the test generation layer

Reveal Solution

Discussion 1

Question #44

Topic 1

Consider the following layers of the gTAA structure:

I) Test generation layer -

II) Test definition layer -

III) Test execution layer -

IV) Test adaptation layer -

Consider also the following capabilities associated with these layers:

- 1) Acquire all the necessary resources before to run each test and release them all after the run, in order to avoid interdependencies between tests
- 2) Allow the automated test scripts on an abstract level to interact with components, configurations, and interfaces of the SUT
- 3) Define test directives that allow configuring the algorithms used to produce automatically the test cases from a given model of the SUT
- 4) Allow the specification of abstract and concrete test cases for example by means of templates and/or guidelines

Which of the following best matches each layer with the appropriate capability?

- A. I-3, II-4, III-1, IV-2
- B. I-4, II-3, III-1, IV-2
- C. I-4, II-3, III-2, IV-1
- D. I-3, II-4, III-2, IV-1

Reveal Solution

Discussion

#### Question #45

Topic 1

Assume that, as part of the design choices made for a TAA, 3-switch coverage is the technique that has been selected for determining which test cases have to be produced for automated model-based testing.

Which of the following layers of the gTAA does this design choice refer to?

- A. Test generation layer
- B. Test definition layer
- C. Test execution layer
- D. Test adaptation layer

Reveal Solution

Discussion

#### Question #46

Topic 1

Which of the following statements, related to aspects of the SUT to be considered when designing a TAA, is mostly true?

- A. All the interactions between SUT and TAS should be logged with the highest level of detail
- B. All the internal test interfaces of the SUT should be removed prior to the product release
- C. All the interfaces of the SUT affected by the tests should be controllable by the TAA
- D. All the external test interfaces of the SUT should be removed prior to the product release

Reveal Solution

Discussion

#### Question #47

Topic 1

Assume that you are the TAE responsible for the correct functioning of a TAS deployed in a test environment that consists of a few machines running the same version of the operating system. The TAS has been working and stable since its deployment, and it has been used to run an automated test suite consisting of many similar automated tests. The infrastructure team is planning to update the operating system on these machines by installing a new service pack for security reasons. Since the vendor of the operating system assures full backward compatibility, the infrastructure team assures that there will be no impacts on the functioning of the TAS.

Based only on the given information, which of the following approaches would you adopt for confirming the functioning of the TAS with respect to the specified update of the test environment?

- A. Verify the behavior of the automated tests starting from a reduced set of them and then proceed incrementally until confirming the correct functioning of the whole automated test suite
- B. Make sure that the infrastructure team will install the service pack also on the machines where the SUT is running and then run the whole automated test suite to check its behavior
- C. Verify the behavior of the whole automated test suite by running all the automated tests since you should not expect any failures based on the infrastructure team assurance that there will be not impacts on the TAS
- D. Do not run any test because you can immediately confirm the correct functioning of the automated test suite since the infrastructure team assures that there will be not impacts on the TAS

Reveal Solution

Discussion

#### Question #48

Topic 1

The GUI of a CRM (Customer Relationship Management) application has been delivered through Internet Explorer with proprietary Active X and Java controls. This implementation allows enabling rich client capabilities, but specific commercial test automation tools are necessary for the purpose of automating test cases at GUI level. You have basic programming skills and your main goal is to quickly produce at a low cost some automated scripts, by automating a small number of functional test cases, for demonstrating only whether a small set of those commercial tools are able to properly recognize the actions taken by a tester when interacting with the GUI of the CRM application.

Based only on the given information, which of the following scripting techniques would you expect to be most suitable in this scenario?

- A. Data-driven scripting

- B. Keyword-driven scripting
- C. Linear scripting
- D. Structured scripting

[Reveal Solution](#)[Discussion](#) **1****Question #49***Topic 1*

You are using a gTAA to create a TAS for a project. The TAS is aimed specifically at automating given sets of manual test cases for standalone desktop applications. All the interactions between TAS and SUT will involve only the GUI of such applications.

Based only on the given information, which of the following components of the gTAA would you include in the TAS?

- A. The protocol component of the test adaptation layer
- B. The test model component of the test generation layer
- C. The API component of the test adaptation layer
- D. The test reporting component of the test execution layer

[Reveal Solution](#)[Discussion](#) **1****Question #50***Topic 1*

You are using a gTAA to create a TAS for a project. The TAS is aimed specifically at automatically generating and executing test cases based on a use-case modeling approach that uses UML as modeling language. All the interactions between TAS and SUT will occur only at API and GUI level.

Based only on the given information, which of the following components of the gTAA would you exclude from the TAS in this scenario?

- A. The test reporting component of the test execution layer
- B. The test model component of the test generation layer
- C. The test execution (test engine) of the test execution layer
- D. The CLI component of the test adaptation layer

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## Question #51

Topic 1

Which of the following statements about the reuse of TAS artifacts is true?

- A. Reusable TAS artifacts can include components (or part of them) associated with different layers of the TAA
- B. To enable reuse of TAS artifacts a good design for reuse built into the TAA is needed and no further actions are needed during the TAS lifecycle
- C. Continuous maintenance and improvements for reusing TAS artifacts are mostly addressed during the design of the TAA
- D. Reusable TAS artifacts associated with the definition layer of the TAA include the adaptors to the SUT components and/or interfaces

[Reveal Solution](#)[Discussion](#) 1

## Question #52

Topic 1

A regression test suite consists of 500 test cases which are all executed manually. The business case for a pilot project is the adoption of test automation based on a commercial tool for reducing the execution time by a factor of 90% for 100% of the tests of such regression test suite. The pilot project lasted one month as planned and you are currently evaluating its results. At the end of the pilot project 40% of the regression tests have been automated and their execution time has been reduced by a factor of 60%.

Based on the given information, which of the following statements would you expect most likely to be true in this scenario?

- A. The duration of the pilot project has been too short. The pilot project should last until the success factors defined in the business case are achieved
- B. The target defined for the business case is overly accurate. The target for a pilot project should not be measurable
- C. The project selected for the pilot is too critical. The project selected for a pilot project should be not too critical or too trivial
- D. The target defined for the business case seems difficult to hit. The target defined for the pilot project should be realistic

[Reveal Solution](#)[Discussion](#)

## Question #53

Topic 1

Consider a pilot project for a test automation tool. You have identified a suitable project, planned and conducted the pilot. The pilot has been successful and the tool is being deployed within your organization, following an approach that prescribes to increase tool use by one project at a time. During this rollout some test processes could be slightly changed to gain additional benefits from using the tool. As a result of the pilot project a reduced set of manual tests have been automated for the first time. You are currently monitoring the test automation efficiency and such monitoring reveals that the automation regime for such tests is not yet mature.

Based only on the given information, which of the following statements would you expect most likely to be true?

- A. The approach used for deploying the tool within the organization seems compatible with the guidelines that refer to the success factors for deployment

- B. The test execution time will benefit more than other aspects (e.g., failure analysis) from the evolution to a more mature automation regime
- C. The target defined for the pilot project was inappropriate, because the automation regime for the automated tests at the end of the pilot is not yet mature
- D. During the rollout, test processes should not be modified to gain additional benefits from using the tool. Tool use should be adapted to fit the processes

[Reveal Solution](#)[Discussion](#)

#### Question #54

Topic 1

Consider a TAS that is going to be deployed into production for the first time. The TAS requires shared resources and has been developed specifically to run in a single and specific target environment separated from the SUT environment. The infrastructure in which the TAS will run has been created as well as the procedures for maintaining the TAS and its infrastructure, and the suite that the TAS will execute. Very unlikely the TAS will be required to work in new unknown environments over the next three years (its expected operational lifetime) while there is a high-risk that after the TAS will be deployed in the target environment, a number of existing applications could no longer work because of conflicts with the existing shared resources. The TAS will be subjected to many corrective, adaptive and perfective maintenance activities during its lifetime.

Based only on the given information, which of the following activities would you expect to be most effective at mitigating the risk associated with the first deploy into production?

- A. Testing the TAS for compatibility issues associated with the target environment
- B. Testing the TAS for its ability to be transferred into different target environments
- C. Testing the TAS for regressions due to optimizations that fix non-functional issues
- D. Testing the TAS for its ability to run in the same environment of the SUT

[Reveal Solution](#)[Discussion](#)

#### Question #55

Topic 1

Consider a TAS deployed into production. The SUT is a web application, and the test suite consists of a set of automated regression tests developed via the GUI. A keyword-driven framework has been adopted for automating the regression tests. Such tests are based on an identification at low-level of the web page components (e.g., class indexes, tab sequence indexes, and coordinates). In the next planned releases, the SUT will be subjected to a significant corrective maintenance (bug-fixes) and evolution (new features). Maintenance costs needed to update the test scripts should be as low as possible and high reusability of test scripts is also expected.

Based only on the given information, which of the following statements would you expect most likely to be true in this scenario?

- A. The keyword-driven framework is not suitable. It would be better to adopt a structured-scripting approach
- B. False positive errors are likely to occur when running the automated tests on the new releases without modifying the tests
- C. The total execution time of the automated regression test suite will increase progressively for the next planned releases
- D. The keyword-driven framework introduces a level of abstraction that is too high and makes difficult to understand what really happens

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## Question #56

Topic 1

Which of the following statements does not describe a good practice for maintaining the TAS?

- A. TAS must run in the development environment because development and programming knowledge are required for its maintainability
- B. The TAS must be under configuration management, along with the test suite, the testware artifacts and the environment in which it runs
- C. The TAS must separate the test scripts from the environment in which it runs and from the associated harnesses and artifacts
- D. The TAS must consist of components that can be easily replaced without affecting the overall behavior of the TAS itself

[Reveal Solution](#)[Discussion](#)

## Question #57

Topic 1

Consider the following examples of TAS metrics:

- I) On average, it takes 15 seconds to execute an automated test
- II) On average, 0.5 defects per KLOC are present in the automation code

Which of the following statements is true?

- A. I. and II. are both internal TAS metrics
- B. I. is an internal TAS metric and II. is an external TAS metric
- C. I. and II. are both external TAS metrics
- D. I. is an external TAS metric and II. is an internal TAS metric

[Reveal Solution](#)[Discussion](#) 2

## Question #58

Topic 1

Assume that you are executing the first test run of a test automation suite that consists of 200 tests. All the relevant information related to the state of the SUT and to the automated test execution is stored to a small database. During such run you observe that the first 10 tests pass while an abnormal termination occurs when executing the 11th test: this test does not complete its execution and the overall execution of the suite is aborted. An immediate analysis of the abnormal termination is expected to be too time consuming since you have been asked to produce as soon as possible a detailed report of the test execution results for the first test run.

Based only on the given information, which of the following would you expect to be the most important action to be performed immediately after the abnormal termination occurred during the execution of the 11th test, in this scenario?

- A. Re-running the test automation suite limited to the subsequent tests

- A. Re-running the test automation suite limited to the subsequent tests
- B. Returning the database to a consistent state that allows subsequent tests to run
- C. Making a backup of the database for later analysis
- D. Re-running the test automation suite from the beginning

Reveal Solution

Discussion

Question #59

Topic 1

Which of the following metrics could suggest, under certain conditions, that an automated regression test suite has not been updated with respect to new functionalities added to the SUT?

- A. The ratio of comments to executable statements in the SUT code
- B. The SUT code coverage provided by the execution of the regression test suite
- C. The defect density in the automation code of the regression test suite
- D. The ratio of comments to executable statements in the automation code of the regression test suite

Reveal Solution

Discussion

Question #60

Topic 1

A project consists of distributed teams working in a 24-hour environment (in which the activities happen at all hours of the day). This project adopts a CI (Continuous Integration) process triggered by developers check-in and consists of automated activities that allow generating a build, deploying such build into a test environment and then executing integration tests. These integrated tests are automated and executed by a TAS integrated within the CI process. Since the builds occur several times a day, the integration tests are run multiple times a day. In particular an up-to-date reporting containing the test execution status for all the builds of the project shall be made available 24/7 to all the people involved in the project itself.

Based only on the given information, which of the following would you expect to be the best way for automatically providing this information from the TAS while fulfilling the project needs in this scenario?

- A. Store the execution results of the integration tests for the last build to a database (without overwriting the results from the previous builds), and automatically update based on this database a dashboard accessible to all the people involved in the project and aimed at containing the build history
- B. Store the execution results of the integration tests for the last build to a database (overwriting the results from the previous builds), automatically create a test execution report for this build and send such report via e-mail to all the people involved in the project
- C. Store the execution results of the integration tests for the last build to a database (without overwriting the results from the previous builds), automatically create a test execution report for this build and send such report via e-mail to all the people involved in the project
- D. Store the code coverage after the execution of the integration tests for the last build to a database (without overwriting the results from the previous builds), and automatically create and send an updated chart showing the trend in such coverage via e-mail to all the people involved in the project

Reveal Solution

Discussion



## Question #61

Topic 1

Which of the following attributes should not be included in a test execution report associated with a suite of automated tests?

- A. Summary of the test execution results
- B. System/Application under test and its version
- C. Defect clusters identified during test execution
- D. Environment in which the tests have been executed

[Reveal Solution](#)[Discussion](#) 2

## Question #62

Topic 1

Which of the following aspects related to the transition process from manual to automated tests, would you expect to be most important for mitigating the risks associated with not followed standards or not testable code during the development of a TAF and/or test libraries?

- A. Correctness and completeness of manual test data and test cases
- B. Adoption of a pilot project with a limited scope for test automation
- C. Cooperation between developers and test automation engineers
- D. Correct functioning of selected test tools in the test lab environment

[Reveal Solution](#)[Discussion](#)

## Question #63

Topic 1

Which of the following statements related to the implementation of automated regression testing is least likely true?

- A. When automating regression tests, the structure of automated tests should be the same as the corresponding manual tests
- B. When automating regression tests, the corresponding manual tests should have already been executed to verify they operate correctly
- C. When automating regression tests, the initialization steps needed to set the test preconditions should be automated wherever possible
- D. When automating regression tests, taking into account the time needed to execute any test could allow reducing the deployment risk

[Reveal Solution](#)[Discussion](#) 1

## Question #64

Topic 1

Consider a defect 1e-test in the current release of the software.

Which of the following would you expect to be the most likely reason that describes why such defect could re-occur in future releases?

- A. Automated defect re-testing is not effective at confirming that the resolved defect will continue to work in future releases
- B. The configuration management process does not control properly the synchronization between multiple software archives
- C. The automated defect re-test is not added to the automated regression test suite that will be executed in the future releases
- D. The automated defect re-test has typically a narrower scope of functionality compared to other automated tests

Reveal Solution

Discussion

Question #65

Topic 1

Consider a SUT that shall run on multiple platforms during the execution of automated test runs. In each test run an automated test suite needs to be executed with the same version of the TAF against the same version of the SUT with respect to all these platforms, and each platform shall have its own dedicated environment. Your goal is to implement a process as automated as possible (i.e., in which the manual intervention is minimized) that allows implementing a consistent setup of the TAS across all the needed multiple environments.

Which two of the following aspects would you expect to be most relevant for achieving your goal in this scenario? (Choose two.)

- A. The configuration of the TAS uses automated installation scripts
- B. The TAF saves the logs needed to debug errors in XML format
- C. Features of the TAF not used by the automated tests have been tested
- D. All the automated test cases contain the expected results
- E. The TAS components are under configuration management

Reveal Solution

Discussion

Question #66

Topic 1

Consider a TAS that adopts a keyword-driven framework. The SUT is a web application and the set of available keywords for writing the automated tests consists of a very large number of keywords that relate to highly specific user actions tied directly to the GUI of the SUT. The automated tests written with such set of keywords are statically analyzed by a custom tool that shows the presence of many repeated instances of several identical sequences of keywords. The waiting mechanism implemented by the TAS for a webpage load is based on a synchronous sampling within a given timeout: the TAS allows checking a webpage load every X seconds until a timeout value.

Based only on the given information, which of the following recommendations would you provide for improving the TAS (assuming it is possible to perform all of them)?

- A. Changing the scripting approach to data-driven scripting

- B. Implementing keywords with higher level of granularity
- C. Changing the wait mechanism to explicit hard-coded waits
- D. Establishing an error recovery process for TAS and SUT

[Reveal Solution](#)[Discussion](#) **1**

#### Question #67

Topic 1

Which of the following statements describes a success factor of a test automation project?

- A. Automated tests must be designed to capture only the data that is strictly needed for comparing expected and actual results
- B. The test cases to automate first must always be selected based on the number of times a test may be run
- C. Test automation can allow creating tests that run faster and are less subject to operator errors
- D. Automated tests failed due to changes in the requirements of the SUT should be promptly fixed rather than commented out

[Reveal Solution](#)[Discussion](#) **3**

#### Question #68

Topic 1

Consider a TAS for testing a desktop application via its GUI. All the test cases of the automated test suite contain the same identical sequences of steps at the beginning (to create the necessary objects when doing a preliminary configuration of the test environment) and at the end of them (to remove everything created specifically for the test itself during the preliminary configuration of the test environment). Moreover, all these automated test cases use also the same set of assertion functions (from a shared library) for verifying the values in the GUI fields (e.g., text boxes).

Based only on the given information, which of the following recommendations would you provide for improving the TAS (assuming it is possible to perform all of them)?

- A. Implementing keywords with higher level of granularity
- B. Improving the architecture of the application in order to improve its testability
- C. Adopting a set of standard verification methods for use by all automated tests
- D. Implementing standard setup and teardown functions at test case level

[Reveal Solution](#)[Discussion](#)

#### Question #69

Topic 1

Consider a TAS that uses exclusively the APIs of a SUT. To make this TAS work, significant changes have been required to the SUT for testing purposes by adding a set of dedicated test interfaces to the APIs provided by the SUT. All the automated tests will use such test interfaces when interacting with the SUT. Assume that you are currently verifying the correctness of the automated test environment and test tool setup.

Based only on the given information, which of the following would you expect to be the most specific risk associated with this scenario?

- A. The connectivity from the TAS to the external/interface systems will not work
- B. The process of configuring the TAS will be error-prone due to manual intervention
- C. The automated test cases will not contain the expected result
- D. False alarms, that are unlikely to occur in real world, will be observed during testing

Reveal Solution

Discussion

Question #70

Topic 1

You have been asked to automate a set of functional tests at system test level via the CLI of the SUT for the first release of a new software system. Such automated tests, which will be delivered to the team in charge of maintenance testing, will be used as part of the regression testing and thus they must be as fast and cheap to maintain as possible. Since the regression test suite is expected to grow significantly over time, also the cost of adding new automated tests must be as low as possible. In particular, the number of scripts should be dependent on the size of the SUT rather than the number of tests. Moreover, there is high risk that the test automation tool will change several times during the operational life of the system, and thus the automated tests should be implemented to assure high level of independence from such tool.

Based only on the given information, which of the following scripting techniques would you expect to be most suitable in this scenario?

- A. Data-driven scripting
- B. Keyword-driven scripting
- C. Linear scripting
- D. Structured scripting

Reveal Solution

Discussion 1

Question #71

Topic 1

You have been asked to determine a TAS for a new release of a SUT. The SUT provides a given set of APIs and the tests to be automated cover the whole set of these APIs. Assume also that such tests are automatable using exclusively such APIs. A risk analysis for three different subsets of the SUT APIs has produced the following results (both likelihood and impact have been rated on the following scale: 1 - Very low, 2 - Low, 3 - Medium, 4 - High, 5 -Very High):

API subset	Likelihood	Impact
Impact	1	3
Bulk	3	5
Applicative	4	3

The time available is severely restricted and could not be possible to implement all the automated tests to cover the whole set of APIs.

Based only on the given information, which of the following statements would you expect most likely to be true in this scenario?

- A. You should plan for the development of additional custom APIs implemented specifically for testing
- B. You should plan to automate first the test cases associated with the subset of the SUT APIs named "Inquiry"
- C. You should expect a low likelihood of false positives due to the level of intrusion when running the automated tests
- D. You should determine a different automation solution for each of the three different subsets of SUT APIs

Reveal Solution

Discussion

Question #72

Topic 1

As a TAE you are evaluating a functional test automation tool that will be used for managing several projects within your organization. Such projects will require the tool to work effectively and efficiently with SUTs in distributed environments. The test automation tool has also to interface with other test tools (test management tool and defect tracking tool) already in place. These test tools will be subjected to planned updates and their interface to the test automation tool could not work properly after these updates.

Based only on the given information, which of the following are the two least important concerns related to the evaluation of the test automation tool in this scenario? (Choose two.)

- A. Is the test automation tool able to launch processes and execute test cases on multiple machines?
- B. Does the test automation tool support a licensing scheme that allows accessing different feature sets?
- C. Is the test automation tool able to log the test results on multiple machines back to a central location?
- D. Do the release notes for the planned updates specify the impacts on the interface with the test automation tool?
- E. Does the test automation tool need to install specific libraries that could impact the SUT?

Reveal Solution

Discussion

Question #73

Topic 1

Assume that your goal is to verify completeness, consistency and correct behavior of an automated test suite. The TAS can be considered successfully installed in the SUT environment. All the preliminary checks aimed at verifying the correct functioning of the automated test environment and test tool configuration, installation and setup have been successfully performed.

Based only on the given information, which of the following is not a relevant check for achieving your goal in this scenario?

- A. Checking whether all the test cases contain the expected results
- B. Checking whether the post conditions have been fulfilled for all the test cases
- C. Checking whether the loading of the TAS is repeatable in the SUT environment
- D. Checking whether all the test cases produce repeatable outcomes

[Reveal Solution](#)[Discussion](#)**Question #74***Topic 1*

Consider a TAS that adopts a commercial test automation tool. The main issue associated with the TAS is that the default logs generated by the test automation tool have inconsistent formats: different types of messages (pass/fail steps, screenshots, warnings, etc.) are logged with different formats. To solve this issue some custom logging functions that can be invoked from the test scripts and are able to log the different types of messages with the same format have been implemented. A possible problem during this implementation is represented by the excessive size of the generated logs that could make difficult to find the needed information. Assume that all the default logs will be disabled when running the automated tests and that not all these tests will require the same amount of logged information.

Based only on the given information, which of the following would you expect to represent the best suggestion for implementing the custom logging functions in this scenario?

- A. Implementing the custom logging functions without saving timestamps
- B. Implementing the custom logging functions to support different levels of tracing
- C. Implementing the custom logging functions without saving stack traces
- D. Implementing the custom logging functions to redirect the logs to multiple files

[Reveal Solution](#)[Discussion](#)**Question #75***Topic 1*

Consider a layered architecture that consists of distinct layers stacked vertically on top of each other, in which components in one layer can interact only with components in the same layer or with components from any lower layer.

Which of the following statements about the testability of applications adopting such architecture is not true?

- A. Such architecture can help the isolation of individual components for testing purposes
- B. Such architecture leads automatically to highly-controllable and observable applications
- C. Such architecture can simplify the swap out of lower-level components with components for testing
- D. Such architecture can increase testability by providing well-defined interfaces on all layers

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## Question #76

Topic 1

You have been asked to implement test automation for a SUT that consists of a web application released into production one year ago. A V-model lifecycle is adopted for managing every planned release and testing is well-established and fully integrated into such development lifecycle and the associated milestones. The tests to be automated are regression tests developed via the GUI which are expected to be run at least four times a month, in correspondence of each planned release, for the whole operational life of the system (six years). Each screen of the GUI uses several third-party controls which are not compatible with existing available automation solutions. The environment for the automation will be stable, fully controllable and separated from other environments (development, staging, production).

Based only on the given information, which of the following aspects would you expect to be most problematic for this automation effort?

- A. Maturity of the test process
- B. Complexity to automate
- C. Frequency of use
- D. Sustainability of the automated environment

[Reveal Solution](#)[Discussion](#)

## Question #77

Topic 1

Which of the following best describes why it is important to separate test definition from test execution in a TAA?

- A. Because such separation allows developing the steps of the test process without being closely tied to the SUT interface
- B. Because such separation allows choosing different paradigms (e.g., event-driven) for the interaction between TAS and SUT
- C. Because such separation allows specifying test cases without being closely tied to the tool used to run them against the SUT
- D. Because such separation allows finding more defects on the SUT

[Reveal Solution](#)[Discussion](#)

## Question #78

Topic 1

Consider a TAS associated to dynamically changing software with frequent releases on a single platform. Your goal is to determine the trend of the effort required to keep the automated tests of the regression test suite in step with the SUT over the frequent releases.

Which of the following metrics would you expect to be most important to collect for achieving your goal?

- A. The code coverage achieved with the automated tests, for each new release of the SUT
- B. The number of automated tests which fail because of a single software defect, for each new release of the SUT
- C. The time it takes to execute all the automated tests, for each new release of the SUT

D. The number of automated tests requiring maintenance, for each new release of the SUT

[Reveal Solution](#)

[Discussion](#)

Question #79

Topic 1

Which of the following statements related to the implementation of automation within new feature testing is most likely true?

- A. Automated tests are not affected by the introduction of a new feature and running them against the new SUT is a waste
- B. The introduction of a new feature could require to make updates or additions to the testware components
- C. The TAE should work with the business analysts for making a new feature testable effectively and efficiently by the TAS
- D. It is generally more difficult to automate test cases for a new feature as the implementation is not yet started

[Reveal Solution](#)

[Discussion](#)

Question #80

Topic 1

In what way does test automation provide quicker feedback regarding new defects than manual testing?

- A. Quality problems will be found during test automation development.
- B. Defects will be detected early in the development of the generic Test Automation Architecture (gTAA).
- C. Automated regression testing can be run after each build for no additional cost.
- D. Tests that are automated have fewer problems with operator error and will accurately identify defects.

[Reveal Solution](#)

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Question #81

Topic 1

Which of the following will help ensure the success of a test automation project?

- A. The software is complex and difficult to test manually.
- B. The test systems have variable configurations and frequent data updates.
- C. The SUT is designed in such a way as to support automated testing.
- D. The Test Automation Framework (TAF) uses the latest technology.

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Question #82

Topic 1



A major company with multiple paper mills uses a standard set of sensors to determine paper thickness, density, tensile strength, etc., at multiple points in the production process. However, each mill currently has its own unique alerting and reporting system. The company will upgrade and centralize their quality control operations so that data from the sensors at each mill will be fed into a database at their headquarters. This central system will supply the alerts and reports to operators and management at all levels. The development team is scaling the network connection requirements, database, and data-collection front-end systems to process 100 samples per second from the sensors at each mill. The development team is almost through designing the high-level system requirements.

Management has asked you, as leader of the test team, how you plan to use automation in testing the system. Which of the following would be the most effective solution?

- A. The automation solution will be large and complex. During early development, automation will be designed to separately test each of the individual portions of the SUT (data collection, database functionality, alerting, and reporting), using the most appropriate technologies for each. The level of intrusion will be minimized by using the SUT's native interfaces whenever possible. Once the SUT is integrated, test automation will involve creation and input of selected sensor data, then monitoring its capture by the SUT, and the resultant alerting and reporting.
- B. The automation solution will be large and complex. During early development, automation will be designed to separately test each of the individual portions of the SUT (data collection, database functionality, alerting, and reporting), using the most appropriate technologies for each. The level of intrusion will be minimized by using the SUT's native interfaces whenever possible. Once the SUT is integrated, exploratory testing will be used with the input of selected and simulated sensor data, and the resultant alerting and reporting will be checked to ensure accuracy and completeness.
- C. The automation solution will be based on risk. The initial risk analysis indicates that testing should concentrate on the data import systems. Sets of good and bad data inputs will be created based on samples of real data from selected mills and injected into the data-collection front-end systems. Periodic ad-hoc queries will be used to monitor the database's storage of the data to confirm accuracy.
- D. The automation solution will be focused on end-to-end functionality. Samples of real data captured at selected mills and manually injected data with anomalies will be used. The alerts and reports sent to the operators will be monitored to confirm the correct responses. Summary reports will be generated for management to analyze to ensure accuracy and completeness.

Reveal Solution

Discussion

### Question #83

Topic 1

You are working for a company that produces software for grocery store chains. You recently completed a successful test automation project for the "Food\$" software that allowed a person to accumulate and spend food dollars based on purchasing certain products. For the Food\$ test automation, you created a simple test framework and implemented the software using an open source tool. Your manager now wants you to expand the test automation to cover the entire Point-of-Sale (POS) software. This includes software to recognize and charge properly for scanned products, issue refunds, determine and apply discounts, and properly record Food\$. The POS software is considerably more complicated and feature-rich than the Food\$ software.

What is the best approach for automating the testing for the entire POS product?

- A. Leverage what you can from the Food\$ framework, but build a more robust framework for the POS test automation.
- B. Use the framework built for Food\$ but change to a commercial tool for the POS test automation.
- C. Start over with new tools and a new framework for this more complex project.
- D. Continue using the existing framework as-is and the open source tools you already know.

Reveal Solution

Discussion