Sample Exam (Answer and Justification)
2012 Advanced Level Syllabus
Test Analyst

Version 1.02

International Software Testing Qualifications Board

Revision History

Version	Date	Remarks
Version 1.00	2012/10/19	Version for voting
Version 1.01	2012/11/23	Version for release
Version 1.02	2016/12/14	Split of document into Questions and Justifications

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0. Introduction

0.1 Purpose of this document

The sample questions, answer sets and associated justifications in this document have been created by a team of Subject Matter Experts and experienced question writers with the aim of assisting ISTQB® Member Boards and Exam Boards in their question writing activities.

These questions cannot be used as-is in any official examination, but they should serve as guidance for question writers. Given the wide variety of formats and subjects, these sample questions should offer many ideas for the individual Member Boards on how to create good questions and appropriate answer sets for their examinations.

0.2 Instructions

The question and answer sets are organized in the following way:

- Learning Objective and K-level
- Question - including any scenario followed by the question stem (The question is contained in a separate document)
- Answer Set (The answer set is contained in the document)
- Correct answer – including justification of the answers

1. ATA Sample Questions

CTAL-ATA _LO-1.2.1

TA-1.2.1 (K2) Explain how and why the timing and level of involvement for the Test Analyst varies when working with different lifecycle models

Question:
Which of the following statements is TRUE with respect to when the test analyst should become involved during different lifecycle models?

Justification:

- **A.** Correct: This is the correct option of how testing activities should be aligned to the sequential lifecycle model phases
- **B.** Incorrect: As stated in the syllabus the analyst should be involved from the beginning of an agile project.
- **C.** Incorrect: test analysis must start earlier, already during requirement specification in sequential lifecycle models.
- **D.** Incorrect: as stated in the syllabus, there may be many differences in how the testing activities are aligned

Point Value: 1

CTAL-ATA _LO-1.3.1

TA-1.3.1 (K2) Summarize the activities performed by the Test Analyst in support of planning and controlling the testing

Question:
Which of the following is a type of testing that someone in the role of a Test Analyst, working with the Test Manager, should typically consider and plan for?

Justification:

- **A.** Correct per the syllabus.
- **B.** Incorrect: This is the responsibility of the TTA.
- **C.** Incorrect: This is the responsibility of the TTA.
- **D.** Incorrect: This is the responsibility of the TTA.

Point Value: 1

CTAL-ATA _LO-1.4.1

TA-1.4.1 (K4) Analyze a given scenario, including a project description and lifecycle model, to determine the appropriate tasks for the Test Analyst during the analysis and design phases.

Question:

A project has been initiated to collect and analyze usage of a web-based search tool in order to optimize search results for particular groups of users. The project will build on initial analysis of user data collected over a period of time and will aim to refine the collection and analysis 'engines' so that relevant data can be collected and analyzed in real time, enabling users to focus their search more effectively.

The project will use agile techniques in an iterative/incremental life cycle. Requirements are based on user stories and these will be explored during short 'sprints'. The sprints will be grouped to focus on data collection for the first part of the project and analysis for the second part.

Risks include the inability to analyze the volume of data collected, inability to collect data for the desired analysis, inadequate speed and response times, and poor user interface.

The testing for the first part has been scoped and requirements have been documented and reviewed with no major concerns arising.

Which one of the following answers describes the most appropriate and complete sequence of activities for the TA to focus on during test analysis and design?

Justification:

- **A.** Correct: with risk mitigation added on to user story test conditions.
- **B.** Incorrect: This option ignores test conditions for risk mitigation and goes straight to test cases, and it is not specific about the objectives of test conditions.
- **C.** Incorrect: This option ignores test conditions altogether and goes straight to test cases.
- **D.** Incorrect: This option ignores analysis of user stories and omits mention of desired coverage.

Point Value: 2

CTAL-ATA _LO-1.5.1

TA-1.5.1 (K2) Explain why test cases should be understood by the stakeholders

Question:

Which one of the following statements does NOT give a good reason why test cases should be reviewed and understood by stakeholders?

Justification:

- **A.** Correct: test cases should be created to comply with the test policy, not the other way around.
- **B.** Incorrect: Yes, this is one of the good reasons, that is to verify that the test cases match the business processes and rules.
- **C.** Incorrect: Yes, this is another good reason, namely that other testers should be able to understand and execute test cases.
- **D.** Incorrect: Yes, developers need to be sure that they have the same understanding of the requirements as the testers in order to catch misunderstandings and also to participate in the optimization of tests.

Point Value: 1

CTAL-ATA _LO-1.5.2

TA-1.5.2 (K4) Analyze a project scenario to determine the most appropriate use for low level (concrete) and high level (logical) test cases

Question:
Scenario: Health Insurance

The IT department of insurance company SecureLife has started a project IQ (Improved Quality) to implement a new health insurance application to make it possible to create online transactions for health insurance claims raised by employees and members of companies or associations having health insurance agreements. In the new application, it will be possible to make registration of all the information about the employees, their age, health conditions, etc. The project also has to fulfill the demands of the people doing insurance calculation, actuaries and the demands from public legislation.

The project team for IQ have testers who are business users with lots of domain knowledge but without much formal test training.

At the same time another project, HIPPOS (Health Insurance Product Public Order Sales), has been started by the marketing department of SecureLife with the purpose of launching a new Internet application that will allow potential buyers of health insurance to use a small calculator to calculate insurance premiums and possible bonus deductions based on age and different health parameters. This application will also allow individual customers to order Health Insurance Products online.

The marketing tool and web page of project HIPPO will be developed and tested by SecureLife's Agile development team, which has worked together for the last three years with the marketing department, developing marketing web applications. The Agile team consists of well-trained testers and developers. They have implemented test automation for configuration and regression testing and they have as part of their retrospectives built check lists of common defects and common security problems.

As senior test analyst in SecureLife you have been asked to give input to the test strategy for the two projects, IQ and HIPPOS, regarding the level of detail and documentation required for test cases in the two projects.

Which TWO of the following are the BEST options for this strategy?

Justification:

- **A.** Incorrect: The scenario states that there are demands for traceability for project IQ, so this is not a good recommendation. Also, testers do not have much testing experience, so logical level is not good.
- **B.** Correct: This is a good recommendation because there are demands for traceability, and the testers do not have much test experience.
- **C.** Incorrect: There are no arguments that support the same detailed level of documentation for project HIPPOS; it is a marketing application they are building.
- **D.** Correct: this is the best recommendation for project HIPPOS, the team has experience in testing and in Agile development and the application is an online marketing application where experience-based testing at a logical level makes a lot of sense.
- **E.** Incorrect: Not a good recommendation, see argument for C.
- **F.** Incorrect: Not a good recommendation, Agile or not it is always best practice to analyze the concrete situation and the concrete requirements, project IQ still needs traceability.

Point Value: 2

CTAL-ATA _LO-1.6.1

TA-1.6.1 (K2) Describe the typical exit criteria for test analysis and test design and explain how meeting those criteria affect the test implementation effort.

Question:

Consider the following exit criterion: “All test cases must be reviewed and approved by representatives from the development and test team.”

The project team has determined that this exit criterion is critical for keeping the project on schedule.

This exit criterion is from which test activity? How will meeting this criterion help keep the project on schedule?

Justification:

- **A.** Correct: per the syllabus as an example of a task that should be completed during this activity and will accomplish the stated purpose.
- **B.** Incorrect: Test cases should be reviewed and approved prior to execution or the process is not likely to help the schedule.
- **C.** Incorrect: Creating test cases is part of Test Design.
- **D.** Incorrect: Executing tests is part of Test Execution.

Point Value: 1

CTAL-ATA _LO-1.7.1

TA-1.7.1 (K3) For a given scenario, determine the steps and considerations that should be taken when executing tests

Question:

You are analyzing the test log below to determine what actions, if any, are required:

Test Step	Expected Result	Actual Result	Outcome
1	Customer name 'Briggs'	Customer name 'Briggs'	Pass
2	Error 202	Error 203	Fail
3	Customer name changed to 'Jones'	Customer name changed to 'Jones'	Pass
4	Error OP12	Error OP21	Pass
5	Switch to Delivery screen	Remains on Customer screen	Fail

On further investigation test step 2 was resolved as a typographical error in the log; the actual result was 'Error 202' as expected.

Which option represents the appropriate action to take next?

Justification:

- **A.** Correct: checking that tests were correct in every case before raising an incident report.
- **B.** Incorrect: This raises incident reports for steps 4 and 5 without checking test documentation or waiting for the outcome of the repeat step 4 test.
- **C.** Incorrect: This adds an incident report for the 'false positive' step as well as steps 4 and 5 and does not check test documentation.
- **D.** Incorrect; This option rechecks steps 2 and 4 but raise an incident report for step 5 without checking that the test was correct.

Point Value: 2

CTAL-ATA _LO-1.8.1

TA-1.8.1 (K2) Explain why accurate test case execution status information is important

Question:
Which one of the following statements best expresses why accurate test case execution status information is important?

Justification:

- **A.** Correct. From the syllabus: "From the point of view of the test process, test progress monitoring entails ensuring the collection of proper information to support the reporting requirements. This includes measuring progress towards completion".
- **B.** Incorrect. Test case execution status could have a bearing on the ordering of which defects to fix, but there are other items, such as defect severity, which are more important.
- **C.** Incorrect. Test case execution status information should not be used to evaluate efficiency of individuals. It can give an idea of how quickly team members are working through test cases, but status alone does not allow a manager to decide whether or not a team member is efficiently using their time.
- **D.** Incorrect. Test case status information just has to do with status. The validation of test case coverage should be done earlier.

Point Value: 1

CTAL-ATA _LO-1.9.1

TA-1.9.1 (K2) Provide examples of work products that should be delivered by the Test Analyst during test closure activities

Question:

Which of the following is a typical work product that the Test Analyst would deliver as part of the test closure activities?

Justification:

A. Correct: Only the deferred defects are of interest to the people who will be maintaining and supporting the software, so this is the list that should be supplied at closure. The other items are part of the test summary report.

B, C & **D:** Incorrect. See explanation for A.

Point Value: 1

CTAL-ATA _LO-2.2.1

TA-2.2.1 (K2) Explain the types of information that must be tracked during testing to enable adequate monitoring and controlling of the project

Question:
Which of the following statements best expresses the types of information that must be tracked during testing to enable adequate monitoring and controlling of the testing project

Justification:
- **A.** Correct: these are 4 of the 5 dimensions mentioned in the syllabus.
- **B.** Incorrect: seen from a test monitoring and control perspective the performance of individual developers is not in scope.
- **C.** Incorrect: to get the right picture of progress both dimensions passed/failed executed/non-executed is important.
- **D.** Incorrect: it is one-sided, beyond the control of the testers and influenced by other factors, how many test cases pass and how many fails.

Point Value: 1

CTAL-ATA _LO-2.3.1

TA-2.3.1 (K2) Provide examples of good communication practices when working in a 24-hour testing environment

Question:
According to the syllabus, which of the following would be the MOST effective method of communication between test team members who are distributed across several time zones?

Justification:
- **A.** Correct: Accurate information in the defect tracking system enables everyone to work efficiently with less follow up needed. Any of the meeting options might work, but it depends on the time zones and availability. The defect tracking system will always work.

- **B.** Incorrect: If anything, this would make it worse as the frequent loading of new software would make it more difficult to keep everyone on the same versions and unblocked.

C& **D.** Incorrect: See A

Point Value: 1

CTAL-ATA _LO-2.4.1

TA-2.4.1 (K3) For a given project situation, participate in risk identification, perform risk assessment and propose appropriate risk mitigation

Question:

A project to develop a foreign exchange Automated Telling Machine for an airport has been planned and a risk assessment has shown that there are 3 key risks:

1. There is a risk that usability will be a problem for visually impaired users because the operation requires viewing several screens in sequence with relatively small text. This has been assessed as medium likelihood with high impact.
2. There is a risk that response will be relatively slow because the foreign exchange rates will be checked before each transaction; this has been assessed as medium likelihood with medium impact.
3. There is a risk that accuracy of calculations could lead to cumulative errors. This has been assessed as low likelihood with high impact.

The test strategy currently requires performance testing during system test, usability testing during User Acceptance Test and accuracy tests at every test level. The project schedule is under time pressure.

Which of the following possible risk mitigation actions should be prioritized highest?

Justification:

- **A.** is the correct answer.
- **B.** Incorrect: is a good suggestion but is a lower priority because the risk is lower.
- **C.** Incorrect: is a good suggestion but is a lower priority.
- **D.** Incorrect: is a good suggestion but will not mitigate risk as well as A. It could be done as well as A but this should not override A as the highest priority.

Point Value: 1

CTAL-ATA _LO-3.2.1

TA-3.2.1 (K2) Explain the use of cause-effects graphs

Question:

Which of the following statements about cause-effect graphing is NOT true?

Justification:

A. Correct: Cause-effect graphs show condition combinations that cause results, exclude results, multiple conditions that must be true to cause a result and alternative conditions that can be true to cause a particular result. Therefore, this option is NOT true.

B, C, and **D**: Incorrect: they are true.

Point Value: 1

CTAL-ATA _LO-3.2.2

TA-3.2.2 (K3) Write test cases from a given specification item by applying the equivalence partitioning test design technique to achieve a defined level of coverage

Question:

A company has set up an employee wellness program and combined it with the premium for health insurance:

The full standard premium for a health insurance policy is $400.

The program has the following rules:

1) Employees who make a pledge — on the honor system — that they don't smoke, or that they take a stop-smoking class, and have a BMI below 30, get 10% off their contribution toward the full standard insurance premium.
2) Employees who fill in a "health risk assessment" with more health details will be rewarded with a $25 reduction in premium.
3) Employees who participate in a yearly health control at the company a) receive a $50 reduction in their premium for having a BMI of 27.5 or less, and a $25 reduction for having a BMI below 30. And b) if they are non-smokers, they receive an additional $50 reduction in their premium, and those that have joined a stop-smoking class receive a $25 reduction. Smokers pay an additional premium of $75.

How ma*n*y test cases are needed to achieve 100% test coverage of equivalence partitions of the input parameters, when testing this specification by applying the equivalence partitioning test design technique and what will be the maximum and minimum resulting premium?

Justification:

A. Correct: Parameter 1) and 2): Getting the 10 % reduction for signing pledge of honor and filling out a detailed assessment and both have 2 partitions either the do it or they don't.
Parameters 3) The smoking and the BMI parameter each have 3 partitions, so 3 test cases will be sufficient to hit all of the partitions. As for the maximum premium: An employee not signing the pledge of honor, and not filling out the detailed assessment being a smoker and having a BMI of 30 or more will have to pay the full standard premium + extra $75. On the other hand, an employee, signing the pledge of honor filling out the detailed assessment, being a nonsmoker and having a low BMI of less than 27,5 will get deductions of: 40+25 + 50 + 50 = 165 leaving $235 in premium.

B, C & **D.** Incorrect: See justification for A.

Point Value: 2

CTAL-ATA _LO-3.2.3

TA-3.2.3 (K3) Write test cases from a given specification item by applying the boundary value analysis test design technique to achieve a defined level of coverage

Question:

The participants in a yearly health check for employees are required to answer questions about smoking: Whether they are non-smokers, have started a stop-smoking class, or are smokers. This is a distractor that is probably too strong, suggest delete.

Their BMI (Body mass index) is measured in the following categories: 18.9 or less is underweight, 19 to 24.9 (inclusive) is normal, from 25 to 29.9 (inclusive) is overweight, and 30 or more is heavy overweight

Their blood pressure is measured in categories from optimal to severely high. For simplicity in this example, only the high blood pressure (systolic) will be considered: Everything under 120 is optimal, up till 129 (inclusive) is normal, from 130 to 159 (inclusive) is medium high, and from 160 up till 179 (inclusive) is high and everything over that is severely high.

How many test cases are need to achieve 75% test coverage when testing this specification by applying the boundary value analysis test design technique using 2 values per boundary and testing BMI and blood pressure only with positive integer values. Each test case has both BMI and blood measures as data values.

Also, what about extreme boundaries (this are not taken into account), if not say so explicitly.

Justification:

- **A.** Incorrect, this is wrong see explanation under C.
- **B.** Incorrect: this is only 50%.
- **C.** Correct: this is correct 6 out of 8 are 75%. 8 is the maximum number of test cases needed for Blood Pressure which has 4 boundaries with 2 values each: 119, 120, 129, 130, 159, 160, 179, 180 For BMI there are 3 boundaries and thus 6 values: 18.9, 19, 24.9, 25, 29.9 and 30 these are covered by the same test cases as is the BP parameter.
- **D.** Incorrect: this is the number for 100 % coverage.

Point Value: 2

CTAL-ATA _LO-3.2.4

TA-3.2.4 (K3) Write test cases from a given specification item by applying the decision table test design technique to achieve a defined level of coverage

Question:
The insurance company GoodHealth has launched a new health insurance product - for all customers both new and existing - with the following specification:

Standard premium fee is 500€.

A bonus program offers customers buying the health insurance product with a 25€ discount to the standard premium fee to accept participating in the medical tests even if they are not participating.

The customers get a 25€ discount to the standard premium for every one of four medical tests (BMI, blood pressure, glucose and cholesterol) that they take as part of the yearly medical test plus an extra 75€ if they take all the tests.

How many test cases are needed when using a collapsed decision table? How many test cases are needed when using a non-collapsed decision table but with the limitation to test customers who do not accept to participate in any medical tests, only with one test case?

Choose TWO options

Justification:

- **A.** Incorrect: see explanation for C.
- **B.** Incorrect: see explanation for C.
- **C.** Correct: Not accepting to participate = 500 in premium, accepting to participate but failing to show up for some reason = (500 – 25) = 475. Participating with any combination of 1, 2, 3, or 4 tests will add 4 more test cases with different outcomes. See attached decision table.
- **D.** Incorrect: see explanation for E.
- **E.** Correct: 1 test case for not accepting to participate at all + 2*2*2*2 to cover the possibilities of yes and no in participating in the 4 tests, See decision table also in spreadsheet.
  (it makes no sense to do 15 more tests for people not accepting to participate since they will all result in the same negative result of not participating in any test so they are not done due to the restriction. If this restriction had not been introduced, then the result would be 32 test cases).
- **F.** Incorrect: see explanation for E.

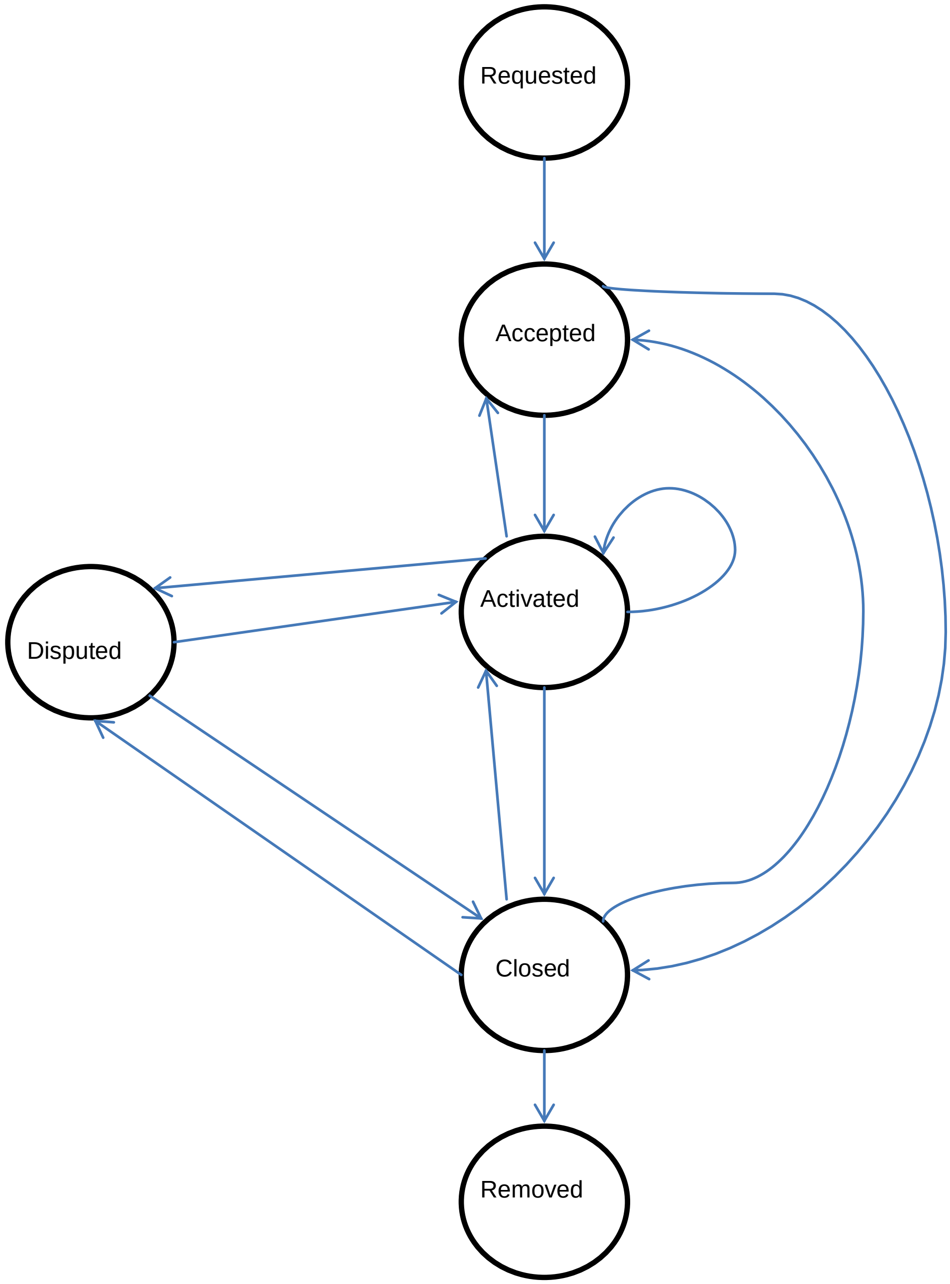
Point Value: 3

CTAL-ATA _LO-3.2.5

TA-3.2.5 (K3) Write test cases from a given specification item by applying the state transition test design technique to achieve a defined level of coverage

Question:

When an employee requests payment of a claim from his/her health insurance, this request follows the sequences of states shown in the diagram from being requested until it is closed and removed.
If information is missing or changed, the claim may be moved back to an earlier state to prevent payment. There are the following restrictions: If a claim in state Accepted has been Closed it can only be restored to the same state Accepted. If a claim in state Activated has been Closed it can only be restored to state Activated.



Starting from Activated: what is the number of 0-switch transitions and what is the number of allowed 1-switch?

Choose TWO options

Justification:

- **A.** Incorrect: 4 transitions for Switch 0, see justification under B.
- **B.** Correct: 4 transitions for Switch 0, Switch 0 from Activated there are 4 transitions: To Activated itself, to Accepted, to Closed and to Disputed.
- **C.** Incorrect: 4 transitions for Switch 0. see justification under B.
- **D.** Incorrect: 11 valid for Switch 1 see justification under E.
- **E.** Correct
  Switch 1 from Activated there are 11 valid transitions
  1. Activated via Activated to Activated,
  2. Activated via Activated to Closed
  3. Activated via Activated to Disputed
  4. Activated via Activated to Accepted
  5. Activated via Closed to Activated
  6. Activated via Closed to Disputed
  7. Activated via Closed to Removed
  8. Activated via Disputed to Activated
  9. Activated via Disputed to Closed
  10. Activated via Accepted to Activated
  11. Activated via Accepted to Closed

  Note Activated via Closed to Accepted is not an allowed transition.

- **F.** Incorrect: 11 valid for Switch 1 see justification under E.
- **G.** Incorrect: 11 valid for Switch 1 see justification under E.

Point Value: 2

CTAL-ATA _LO-3.2.6

TA-3.2.6 (K3) Write test cases from a given specification item by applying the pairwise test design technique to achieve a defined level of coverage

Question:

A company offering house insurance policies has several policy options. They depend on the following factors:

- Building type: house, semi-detached, apartment building, cottage
- Material: wood, concrete, brick, mixed
- Location: city, suburb, countryside, wilderness

You are testing the system and using the pairwise technique for creating test cases.

Using the pairwise technique, how many test cases are required to achieve 2-wise coverage?

Justification:

A. Correct: This can be seen from the following table:

case #	Value 1	Value 2	Value 3
1	house	wood	city
2	house	concrete	suburb
3	house	brick	countryside
4	house	mixed	wilderness
5	semi-det	wood	suburb
6	semi-det	concrete	countryside
7	semi-det	brick	wilderness
8	semi-det	mixed	city
9	apt	wood	countryside
10	apt	concrete	wilderness
11	apt	brick	city
12	apt	mixed	suburb
13	cottage	wood	wilderness
14	cottage	concrete	city
15	cottage	brick	suburb
16	cottage	mixed	countryside

B. Incorrect: this is the result of the number of parameters multiplied by the choices (3 * 4).
C. Incorrect: this is the result of 4 to the power of 4.
D. Incorrect: this is 1-wise coverage.

Point Value: 2

CTAL-ATA _LO-3.2.7

TA-3.2.7 (K3) Write test cases from a given specification item by applying the classification tree test design technique to achieve a defined level of coverage.

Question:

Easytravel is a card which is used for paying journeys on buses and undergrounds. The user can store credit to the card at the Easytravel Loading Machines and the system automatically deducts the fee of the journey while the user shows the card to the card reader on a bus or at the underground station

The system allows the user to load 10, 20, 30, 40, 50 Euros or another, user-defined amount to the card. There are four payment methods available: cash, credit card, debit card or pay-by-phone. After the transaction, the system allows the user to view or print the balance on a receipt

Using the Classification Tree method, what is the minimum number of test cases for 100 % 1-wise coverage?

Justification:

- **A.** Correct: In 1-wise coverage, each value of every parameter must be at least once included. The maximum number of values is in the parameter “amount”, 6.
- **B.** Incorrect: This is the minimum number of options in a branch (show balance - either on screen or on paper).
- **C.** Incorrect: This is the figure you get when you count all the options together (6 + 4 + 2).
- **D.** Incorrect: This is the number of branches (amount, payment method, show balance).

Point Value: 2

CTAL-ATA _LO-3.2.8

TA-3.2.8 (K3) Write test cases from a given specification item by applying the use case test design technique to achieve a defined level of coverage

Question:
Easytravel is a card which is used for paying journeys on buses and undergrounds. The user can store credit to the card at the Easytravel Loading Machines and the system automatically deducts the fee of the journey while the user shows the card to the card reader on a bus or at the underground station.

You are working on an Easytravel system maintenance project and the following use case has been given to you for reviewing.

USE CASE: ADD TO EASYTRAVEL BALANCE FROM CREDIT CARD
Use case ID: UC-201201
Purpose: User is increasing the balance on their Easytravel card.
Actors: user, system

Pre-conditions: User has a valid Easytravel card and a credit card.

Main scenario:

User	System
1. User sets the Easytravel card on the reading plate of the Easytravel Loading Machine.	2. The system asks what the user wishes to do: (E1) a) query card balance (→separate use case) b) add to balance of the card c) check latest card transactions (→separate use case)
3. User chooses "Add balance"	4. System asks the amount. (E1)
5. User selects the amount.	6. System asks for the payment method: (E1) a) cash (→separate use case) b) credit card
7. User selects credit card.	8. System asks the user to insert credit card into the credit card reader. (E1)
9. User inserts the credit card.	10. System shows the amount to be charged from the credit card and asks for confirmation. (E2)
11. User confirms the amount.	12. System makes the credit card transaction and adds the amount to the Easytravel card balance.
13. User removes the credit card and the Easytravel card.	14. System prints out a receipt of the transaction.
	15. System returns to the main screen.

Exceptions:

Exception	Action
E1	User can stop the process by removing the Easytravel card from the reading plate.
E2	If the user does not accept the amount to be charged, they can cancel the operation by pressing the Cancel-button on the credit card reader.

End-result: User's Easytravel card balance has been increased with the selected amount and the equal amount has been charged to the credit card.

How many test cases are required to achieve the minimum coverage for this use case?

Justification:

A. Correct: The correct number has one test case for the main stream plus all the exception paths of which there are 4 E1's and 1 E2.
B. Incorrect; 1 is the minimum for main stream, but does not take into account the alternatives nor the exceptions.
C. Incorrect: The figure is calculated by adding test cases for the options with separate use cases to the correct number.
D. Incorrect: This is a situation with a test case for main stream and one test case for the exceptions.

Point Value: 2

CTAL-ATA _LO-3.2.9

TA-3.2.9 (K2) Explain how user stories are used to guide testing in an Agile project

Question:
Which of the following is true regarding user stories?

Justification:

A. **True, as per definition of a user story in section 3.2.8 in Syllabus**.
B. False. User stories are part or requirements documentation and created before or at the same time as the system is developed.
C. False. User story describes the requirements and what is expected from a system, not specific activities related to those expectations.
D. False. User stories are not related to use cases; nor are they used only in acceptance testing but they can be used at all test levels.

Point Value: 1

CTAL-ATA _LO-3.2.10

TA-3.2.10 (K3) Write test cases from a given specification item by applying the domain analysis test design technique to achieve a defined level of coverage

Question:

Airliners are classified according to a number of factors affecting the air traffic control procedures and airport handling procedures. A recent change to the classification scheme has been introduced to reflect the increasing size of airliners. An air traffic control system has been modified to recognize a change in two factors: weight and passenger capacity as a number of passengers.

The new class includes all airliners with unladen weight between 4700kg and 9500kg, and with passenger capacity between 350 and 550.

Which option below correctly provides an adequate test for this new class of airliners using domain analysis?

Justification:

- **A.** Correct: Test 1 inside the domain, Test 2 on the weight boundary, Test 3 on the capacity boundary and Test 4 outside both boundaries
- **B.** Incorrect: Test 1 is inside both boundaries, Test 2 is outside both boundaries, Test 3 is inside both boundaries and Test 4 is on the upper weight boundary. The set is missing a test at the capacity boundary
- **C.** Incorrect: Test 1 is inside both boundaries, Test 2 is on the lower boundary of weight and the upper boundary of capacity Test 3 is inside both boundaries Test 4 is outside both boundaries. There is duplication of the inside test
- **D.** Incorrect: Test 1 is on the lower boundary for weight and for capacity Test 2 is on both upper boundaries Test 3 is outside both boundaries and test 4 is outside both boundaries. There is duplication of the outside test.

Point Value: 1

CTAL-ATA _LO-3.2.11

TA-3.2.11 (K4) Analyze a system, or its requirement specification, in order to determine likely types of defects to be found and select the appropriate specification-based technique(s)

Question:
A system is being specified for use by automotive dealers. The system will provide the ability to configure a vehicle's optional characteristics (e.g. engine size, external trim, color), visualize the configured vehicle and generate the retail price of the vehicle. An existing system can provide a visual model of any single configuration but it does not enable the user to modify the configuration in the same session. This system is being used as a development prototype from which it is expected that the required functionality can be generated more quickly than working from scratch, and time scales have been adjusted for a rapid delivery.

Which TWO of the following test case design techniques would together give the best chance of achieving acceptable test coverage in the available time frame?

Justification:

- **A.** Incorrect: Although the system may be state-based there is no information about this in the scenario and the approach of building from an existing system suggests there may be minimal definition of state changes.
- **B.** Correct: Classification trees offer the opportunity to manage combinations of inputs effectively.
- **C.** Incorrect: Some of the inputs are likely to be in partitions (e.g. colors) but these are unlikely to be ordered partitions because they identify alternatives, so boundary value analysis is not appropriate.
- **D.** Incorrect: User story testing is appropriate to the likely development approach but would be based more on overall functional flow than on detailed combinations of inputs.
- **E.** Correct: The inputs exist in partitions (options) that are combined, so the combination of Classification Tree with Equivalence Partitioning would be an ideal choice.

Point Value: 2

CTAL-ATA _LO-3.3.1

TA-3.3.1 (K2) Describe the application of defect-based testing techniques and differentiate their use from specification-based techniques

Question:
Which of the following describes typical characteristics of defect-based testing techniques?

Justification:

- **A.** Correct: Defect-based technique uses the typical defects identified for different types of software and programs as the source of test cases in order to find those specific type defects in the software under test.
- **B.** Incorrect: Defect-based techniques are mainly used in system testing, not in component testing.
- **A.** **C** Incorrect: Test cases are created by analyzing the defects typical for the system under test, not by analyzing the documentation of the system.
- **C.** Incorrect: Defect-based testing is not a sub-category of specification-based testing, since the specifications are not the basis of the test cases.

Point Value: 1

CTAL-ATA _LO-3.3.2

TA-3.3.2 (K4) Analyze a given defect taxonomy for applicability in a given situation using criteria for a good taxonomy

Question:
You have just joined a new software organization. They have a product that is in production but it has a large number of usability issues that have been recorded against it. This particular product is a data entry product that records information about new insurance customers. The primary users of the product are data entry operators who input up to 1,000 new entries each day. You have been asked to select a good user interface checklist that can be used to test this product.

Which TWO of the following are items that should be included in this checklist?

Justification:

- **A.** Correct: Tab order is an item you should expect to see on a user interface. checklist.
- **B.** Correct: Rules checking for valid date fields should be on a user interface checklist.
- **C.** Incorrect: This is a security item and should not be on a user interface checklist.
- **D.** Incorrect: This is a functional item and should not be on a user interface checklist.
- **E.** Incorrect: Load testing is not part of usability testing.

Point Value: 3

CTAL-ATA _LO-3.4.1

TA-3.4.1 (K2) Explain the principles of experience-based techniques, and the benefits and drawbacks compared to specification-based and defect-based techniques

Question:
Which of the following statements BEST explains experience-based testing?

Justification:

- **A.** Correct: Experience-based techniques can be used as an option of more formal techniques, if the testers have enough experience and information about the system under test. Typically, this can happen in situations when there is time pressure or the quality of documentation is poor or there is no documentation available.
- **B.** Incorrect: Experience-based techniques can be used if no formal techniques can be used, but it is not the only situation – they should be used to complement formal testing whenever it's possible.
- **C.** Incorrect: Experience helps the tester to decide where to test more, but experience-based techniques do not necessarily improve the test coverage since they are informal and coverage measurement is not always possible while using these techniques.
- **D.** Incorrect: With the use of checklists, experience-based testing can be made more systematic and efficient, but if there is a requirement for the use of specification-based techniques, experience-based techniques can't replace them. Even though this is partially correct, the question asks for the BEST option and thus this is not the correct answer.

Point Value: 1

CTAL-ATA _LO-3.4.2

TA-3.4.2 (K3) For a given scenario, specify exploratory tests and explain how the results can be reported

Question:
You are a Test Analyst on a new project. The requirements documents are on a very high level, containing little detail about the problem the software should address. As a result, your manager has decided that exploratory testing will be a primary test technique used for this project. You have been given the task of specifying, executing and recording the test sessions.

Select THREE of the options below to define what you will need or will use for specifying, executing and recording the sessions.

Justification:

- **A.** Correct per the syllabus as a way to record results.
- **B.** Correct per the syllabus as you will need this knowledge to figure out what to test since the problem is not defined.
- **C.** Correct since specifying exploratory sessions should include charters and time boxes of some type.
- **D.** Incorrect; The pass/fail status of the session per the charter should also be recorded.
- **E.** Incorrect: Exploratory testing will require experienced people - probably domain experienced in this example although an experienced tester could probably do the work as well.
- **F.** Incorrect: This is likely to lead to lost results and no overall tracking.
- **G.** Incorrect: Test cases are not normally defined for exploratory sessions.

Point Value: 2

CTAL-ATA _LO-3.4.3

TA-3.4.3 (K4) For a given project situation, determine which specification-based, defect-based or experience-based techniques should be applied to achieve specific goals

Question:
The marketing department of insurance company, SecureLife, has started a project called HIPPOS (Health Insurance Product Public Order Sales). The purpose of the project is to create a new Internet application where potential customers can calculate insurance premiums and bonuses based on age and different health factors.
The new application will also make it possible for individual customers to order health insurance products online.
The tool and web page created by project HIPPOS will be developed and tested by SecureLife's Agile development team. The Agile development team has worked together for the last three years with the marketing department, developing web applications. The Agile team consists of well-trained testers and developers. They have implemented test automation for configuration and regression testing and they have built taxonomies of common defects and common security problems.
In Project HIPPOS the Product Owner from Marketing has presented the following requirements to the Agile team before the first release planning meeting

1. The Web health insurance calculator shall calculate according to the rules of calculation described by the actuary and insurance calculation business section
2. The user interface of the Web Health Insurance Order application shall follow the same standards as the other marketing web applications and use a predefined setup of page frames and dialogs having been used during the last two years
3. The Web applications shall support the latest 3 versions of each of Internet Explorer, Google Chrome, Firefox and Safari
4. Security must be at the same level as for other marketing web applications

The Agile team has been asked to prepare a testing strategy. The Product Owner asks the team to present their proposal for the use of testing techniques at the release planning meeting.
Which one of the following proposals best supports the given scenario?

Justification:

- **A.** Yes, this is the most likely proposal blending a number of techniques: It mentions both exploratory and defect-based testing, the latter of which is directly supported by the scenario, that states "the team …has as part of their retrospectives built check lists of common defects…" and because the organization should have experience with the types of defects this type of application will exhibit. Further decision table testing is proposed which matches what is written in the scenario for no 1. Automated configuration testing is supported by the scenario for no 3 and so is checklist based attacks for security testing in no 4.
- **B.** No: It is primarily wrong because decision and branch testing are not specification based techniques, but it could also have mentioned defect based testing, since the scenario explicitly mentioned that the team has built a list of common defects.
- **C.** No: It is not likely that specification based testing is applicable for no 1-4 in the scenario further there is nothing in no 1 that supports the use of state transition testing, instead decision table testing ought to have been mentioned.
- **D.** No: Exploratory testing is not mentioned at all. It ought to be part of the techniques used by this Agile team. For no 1 EP and BVA are mentioned while decision table would be more likely. Further specification based techniques are proposed for security testing in no 4 where attack based or error based techniques would be more suitable based on the scenario.

Point Value: 2

CTAL-ATA _LO-4.2.1

TA-4.2.1 (K2) Explain by example what testing techniques are appropriate to test accuracy, suitability, interoperability and compliance characteristics.

Question:
You are testing an application that handles credit card transactions. Because of the nature of the application, the demands for the quality of the system are high: the system shall work accurately and in compliance with the regulations regarding the applications dealing with credit cards. In addition, as there are many systems to which this application is connected to, the interaction between them is critical and shall be flawless.

Which of the following techniques would be MOST appropriate when testing this application?

Select THREE.

Justification:

B, D, E: Correct
A, C, F, G, H: Incorrect

Accuracy, interoperability and compliance are areas which should be detected from the scenario for special attention. The MOST suitable techniques of this group for testing these are decision table, use cases and state transition testing.

Point Value: 1

CTAL-ATA _LO-4.2.2

TA-4.2.2 (K2) For the accuracy, suitability and interoperability characteristics, define the typical defects to be targeted.

Question:
Assume you work for a company that has developed a software component to help users securely and easily manage all the passwords they have defined for different websites.

This component is integrated into hundreds of websites, used by millions of people world-wide.

A new software version of the component is being developed. The main feature of this version is the integration with a specific operating system that does not currently support this component.

You are the test analyst responsible for creating the interoperability tests.

Which of the following defects would be considered OUT OF SCOPE for interoperability testing to detect?

Justification:

- **A.** Correct: this is a usability defect, not an interoperability defect.
- **B.** Incorrect: This is an interoperability issue with some websites.
- **C.** Incorrect; This is an interoperability issue with some browsers.
- **D.** Incorrect: This is an interoperability issue with a specific OS.

Point Value: 1

CTAL-ATA _LO-4.2.3

TA-4.2.3 (K2) For the accuracy, suitability and interoperability characteristics, define when the characteristic should be tested in the lifecycle

Question:

Assume you work for a company that has developed a software component to help users securely and easily manage all the passwords they have defined for different websites.

This component is integrated into hundreds of websites, used by millions of people world-wide.

A new software version of the component is being developed. The main feature of this version is the integration with a specific operating system that does not currently support this component.

You are the test analyst responsible for creating the interoperability tests.

Which of the following statements correctly defines the level in the testing lifecycle in which the relevant test should first be performed?

Choose TWO options.

Justification:

- **A.** Correct: The new functionality must be tested first during component testing
- **B.** Correct: Testing that the main functionality still works should be tested at a component test level.
- **C.** Incorrect: since the ease of use of the component should be tested before acceptance testing.
- **D.** Incorrect: it would be better to test the component on all browsers during component testing.
- **E.** Incorrect: this can first be testing during integration testing.

Point Value: 1

CTAL-ATA _LO-4.2.4

TA-4.2.4 (K4) For a given project context, outline the approaches that would be suitable to verify and validate both the implementation of the usability requirements and the fulfilment of the user's expectations

Question:
Your company has already released a video game product to the market, but it received many complaints from the users regarding performance, usability, security and portability. You have been chartered with overseeing the usability testing for the next release of the game. So far, the user interface looks much better and the response time is greatly improved. The product is stable and all the new features have been completed and summative testing has been completed.

Which of the following would be a reasonable next step?

Justification:

- **A.** Correct. The usability should be verified against the requirements and validated by the real users.
- **B.** Incorrect: Validation should be done before release and by real users.
- **C.** Incorrect: Formative should have been done before summative and the second test described is a load test, not a usability test.
- **D.** Incorrect: Usability can’t be verified by running a comparison with the existing unacceptable product. Also, there’s no reason to develop a prototype - you have the real product.

Point Value: 3

CTAL-ATA _LO-5.1.1

TA-5.1.1 (K2) Explain why review preparation is important for the Test Analyst

Question:

You are an experienced test analyst who has been assigned to a new project that is very important to your company.

Management has decided that the development model to be used will be the V-model. You have been given the task of participating in the review process for the project from beginning to end.

Which of the following statements describes how you prepare for each review in the project, and why it is important?

Choose TWO options.

Justification:

- **A.** Correct: see syllabus (5.1)
- **B.** Correct: see syllabus (5.1)
- **C.** Incorrect: at the stage the system test plan is being created, no component defects have yet been found.
- **D.** Incorrect: user stories represent small units of demonstrable functionality (in the Agile methodology). They are not relevant for the system test review phase, and wouldn't be created in a V-model project.
- **E.** Incorrect: The design document is read, but there probably isn't much code to be reviewed at the stage of component test design review. Even if there were, the TA would probably not read it (this would more correctly be the job of the TTA).

Point Value: 1

CTAL-ATA _LO-5.2.1

TA-5.2.1 (K4) Analyze a use case or user interface and identify problems according to checklist information provided in the syllabus

Question:
Easytravel is a card which is used for paying journeys on buses and undergrounds. User can store credit to the card at Easytravel Loading Machines and the system automatically deducts the fee of the journey while the user shows the card to the card reader at a bus or at the underground station.

You are working on an Easytravel system maintenance team and the following use case has been given to you for reviewing.

USE CASE: ADD TO EASYTRAVEL BALANCE FROM CREDIT CARD
Use case ID: UC-201201
Purpose: User is increasing the balance on their Easytravel card.
Actors: user

Pre-conditions: User has a valid Easytravel card and a credit card.

Main scenario:

User	System
1. User sets the Easytravel card on the reading plate of the Easytravel Loading Machine.	2. The system asks what the user wishes to do: (E1) a) query card balance (→separate use case) b) add to balance of the card c) check latest card transactions (→separate use case)
3. User chooses “Add balance”	4. System asks the amount. (E1)
5. User selects the amount.	6. System asks for the payment method: (E1) a) cash (→separate use case) b) credit card
7. User selects credit card.	8. System asks the user to insert credit card into the credit card reader. (E1)
9. User inserts the credit card.	10. System shows the amount to be charged from the credit card and asks for confirmation. (E2)
11. User confirms the amount.	12. System makes the credit card transaction and adds the amount to the Easytravel balance.
13. User removes the credit card and the Easytravel card.	14. System prints out a receipt of the transaction.
	15. System returns to the main screen.

Exceptions:

Exception	Action
E1	User can stop the process by removing the Easytravel card from the reading plate.
E2	If the user does not accept the amount to be charged, they can cancel the operation by pressing the Cancel-button on the credit card reader.

End result: User’s Easytravel balance has been increased with the selected amount and the equal amount has been charged to the credit card.

Consider the following criteria for a good use case:

Which of these are true regarding this use case? Pick TWO.

Justification:

- **A.** Correct: The main path can be defined from the use case.
- **B.** Incorrect: There are apparent alternative options which are not defined in the use case.
- **C.** Incorrect: There are no descriptions of user messages in the use case.
- **D.** Correct: Only one main path exists in the use case.
- **E.** Incorrect: There are parts in the use case where the outcome is not clear and thus it is not testable.

Point Value: 2

CTAL-ATA _LO-5.2.2

TA-5.2.2 (K4) Analyze a requirements specification or user story and identify problems according to checklist information provided in the syllabus

Question:

You are reviewing the following requirements specification document:

Document: Req. spec 101-A
Object: Transaction screen
Author: Susie Specifier
Date written: 2012-03-15
Version: 0.23
System: Bookkeeping TA-AB1
Subsystem: 2a15
Description: • User must be able to browse customer’s transactions on the customer’s account. It must be possible to view the transactions either chronologically from the oldest to the newest or the opposite way, or by their transaction ID. • There should be 20 transactions, at the minimum, visible on the screen at one time and the user must be able to scroll forward and backward. • The field containing the detailed transaction information must be long enough to contain the name of the transaction counterparty (max 20 char), their ID number (6 digits) and the transaction identifier (8 digits). • It must be possible to change between the Transaction screen and User information screen with the “Swap screen” –button. • The layout of the screen is described in more detail in a separate document. • The retrieval time of new data must be less than 3 seconds per screen. The number of simultaneous users will vary between 20 and 40 and is expected to increase to 60 within a year. • More details about the performance requirements can be found in a separate performance requirements specification document.

The following is the checklist you are using for this review:

1. Is each requirement testable?
2. Does each requirement have acceptance criteria listed?
3. Is a use case calling structure available (if applicable)?
4. Are the requirements uniquely identified?
5. Is the specification versioned?
6. Is there traceability visible from each requirement to the business/marketing requirements?
7. Is there traceability between the requirements and the use cases?

You are reviewing the specification above with the provided checklist. Assume you have access to the document that provides more information about the screen layout. Which of the items on the checklist are NOT met by the specification?

Justification:

- **A.** Correct: There are multiple requirements in this specification and they are not individually numbered or versioned, there is no traceability back to the business requirements and there are no use cases provided.
- **B.** Incorrect: There are no acceptance criteria.
- **C.** Incorrect: Same as C plus the multiple requirements issue as in A.
- **D.** Incorrect: Traceability is missing.

Option A is the only one where all three choices are correct.

Point Value: 2

CTAL-ATA _LO-6.2.1

TA-6.2.1 (K2) Explain how phase containment can reduce costs

Question:
How does phase containment contribute to reducing the cost of development?

Justification:

- **A.** Correct: Defect tracking can identify where a defect was introduced and where it was eliminated. Defects not eliminated may give rise to failures and also generate further defects.
- **B.** Incorrect: This response sounds like a form of containment but actually restricts testing arbitrarily.
- **C.** Incorrect: This response also sounds like a form of phase-centric testing, making the erroneous assumption that certain techniques will be best in certain phases.
- **D.** Incorrect: This response is the reverse of the correct one in that it defers testing until defects have become as expensive as they can get (almost).

Point Value: 1

CTAL-ATA _LO-6.3.1

TA-6.3.1 (K2) Explain the information that may be needed when documenting a non-functional defect

Question:
Which TWO of the following may more frequently need to be explained in greater detail for non-functional defect reports than for a functional defect report?

Justification:

A and **D** are the correct answers
B, C and **E** will be required for all defect reports

Point Value: 1

CTAL-ATA _LO-6.4.1

TA-6.4.1 (K4) Identify, gather and record classification information for a given defect

Question:
A project to build a control system for a national fire service is being conducted on a government contract which has strict deadlines and penalties will be incurred for late delivery. Acceptance criteria include limits on the number of outstanding defects of different levels of severity at the end of user acceptance. The system embodies a sophisticated user interface based on an innovative design that has not yet been deployed in any other system and which is critical to the effectiveness of the system. The project is using a waterfall life cycle but with incremental deliveries based on priorities of individual requirements. The project will make use of a defect classification system during development and the tool in use will allow up to 3 separate classifications to be used.

Which of the following defect classifications will BEST meet the project's needs?

Justification:

- **A.** Correct: because it counts outstanding defects by severity (which relates directly to the acceptance criteria), phase in which the defect was introduced (which is the basis of phase containment to save cost and time in the project), symptom (because user interface defects are of particular concern).
- **B.** Incorrect: tracks defects by priority (not directly related to the acceptance criteria), phase in which the defect was detected (less useful than phase in which it was introduced in terms of phase containment), and suspected cause (which would be useful for process improvement but less useful for driving the project).
- **C.** Incorrect: tracks how the defect was discovered (useful for process improvement but not directly relevant for this project), total defects (rather than those outstanding at any time), and the work product in which the mistake was made (useful for process improvement).
- **D.** Incorrect: tracks symptoms (useful for identifying user interface defects), outstanding defects by priority (not severity), and suspected cause (useful for process improvement).

Point Value: 1

CTAL-ATA _LO-6.5.1

TA-6.5.1 (K2) Explain the purpose of root cause analysis

Question:
Why is root cause analysis important?

Justification:

- **A.** Correct: per syllabus (6.5.1).
- **B.** Incorrect: this is part of how root cause analysis is done.
- **C.** Incorrect: this is just one example of what root cause analysis may discover.
- **D.** Incorrect: this may be a positive by-product of root cause analysis, but is not why it is important.

Point Value: 1

CTAL-ATA _LO-7.2.1

TA-7.2.1 (K2) Explain the benefits of using test data preparation tools, test design tools and test execution tools

Question:

Which of the following is a benefit of using a classification tree tool for test design?

Justification:

- **A.** Correct: This is what classification tree tools do.
- **B.** Incorrect: This is a loose description of a decision table. Definitely not a classification tree.
- **C.** Incorrect: Classification trees do not generate tables that will guarantee 100% coverage.
- **D.** Incorrect: This is a record/playback tool or some other type of test generation tool.

Point Value: 1

CTAL-ATA _LO-7.2.2

TA-7.2.2 (K2) Explain the Test Analyst's role in keyword-driven automation

Question:

In an organization using keyword-driven automation, which of the following activities typically is the responsibility of the Test Analyst?

Justification:

- **A.** Correct per the syllabus.
- **B.** Incorrect: This is the TTA 's job.
- **C.** Incorrect: This is usability testing.
- **D.** Incorrect: Manual tests are not written for the business processes - code is written by the TTA for the processes identified by the TA.

Point Value: 1

CTAL-ATA _LO-7.2.3

TA-7.2.3 (K2) Explain the steps for troubleshooting an automated test execution failure

Question:

You are a Test Analyst on a project. You are running an automated test case and it has just failed. What should be your first step?

Justification:

- **A.** Correct.
- **B.** Incorrect: The TA probably can't alter the data of an automated test. It would be better to run the same test manually to determine if the issue is with the automation or the code being tested.
- **C.** Incorrect: Troubleshooting should be done before calling the TTA.
- **D.** Incorrect: The problem might not be due to a defect, so writing a defect report would be premature at this point.

Point Value: 1