

# **Sample Questions 2012 Advanced Level Syllabus Test Analyst**

Version 1.01

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International Software Testing Qualifications Board

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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.
- Answer Set - correct answer(s) are indicated in **bold face**.
- Justification of the answers.
- Suggested point value for the question.

## 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?

**Answer Set:**

- A. In sequential V-model projects the test analyst should start test analysis concurrently with requirement specification**
- B. In Agile projects the test analyst should start test analysis and design concurrently with coding
- C. In sequential V-model projects the test analyst should start test analysis concurrently with coding
- D. There are no differences in the moment of involvement for test analysts for the various software lifecycles

**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?

**Answer Set:**

- A. Usability
- B. Security
- C. Performance
- D. Maintainability

**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?

**Answer Set:**

- A. **Analyze user stories, identify test conditions at appropriate levels to address user stories, add test conditions for risk mitigation, select test case design techniques to achieve desired coverage, create test cases**
- B. Analyze user stories, select test case design techniques, create high level test conditions for risk mitigation, create test cases to achieve desired coverage for user stories, create risk mitigation test cases
- C. Select test case design techniques, create high level test cases to meet test conditions, create high level test cases to mitigate risks, create low level tests cases to achieve desired coverage.
- D. Analyze risks, create test conditions to address risks, create high level test cases to meet test conditions for risk mitigation and user stories, create all low level test cases.

**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?

**Answer Set:**

- A. **The test manager reviews the test cases in order to control the work of the test analyst and to create the organization’s test strategy**
- B. Customer and users review the test cases in order to verify them against requirements, business processes and business rules
- C. Testers review test cases written by other testers in order to ensure that the test cases are consistent, understandable and executable by testers other than the author
- D. Developers review test cases written by testers in order to align their understanding of requirements with the testers’ and to align component testing with system testing

**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?

### Answer Set:

- A. In project IQ the test cases should be written at a logical level. The testers are business users and they know their business rules and calculations so no need for detailed documentation.
- B. In project IQ the test cases should be written at a concrete level with documented procedures and traceability to requirements.**
- C. In project HIPPOS the test cases should be written at a concrete level with documented procedures and audit trails.
- D. In project HIPPOS the test cases should be written at a logical level allowing the testers flexibility in varying the details to achieve higher coverage.**
- E. In both project IQ and HIPPOS the test cases must be written as concrete test cases, with thorough documentation and detailed procedures.
- F. In both project IQ and HIPPOS the test cases should be written as logical test cases, since we want to be as agile as possible and not spend time on documentation

### 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?

**Answer Set:**

- A. **Test Design; by ensuring that the test team is creating the test cases that will target the correct areas with valid tests**
- B. Test Design; by ensuring the test team is executing the right tests in the right order
- C. Test Implementation; by ensuring the test team is creating the test cases that will target the correct areas with valid tests
- D. Test Implementation; by ensuring the test team is executing the right tests in the right order

**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?

**Answer Set:**

- A. Amend the outcome for step 2. Repeat test step 4 to resolve an apparent 'false positive'. Check the test documentation for step 4 if the outcome is a 'fail'. Check the test documentation for step 5. Raise incident reports for steps 4 and 5 if test documentation shows tests were correct.**
- B.** Repeat test step 4 to resolve an apparent 'false positive'. Amend the outcome for step 2. Raise incident reports for steps 4 and 5.
- C.** Repeat test step 4 to resolve an apparent 'false positive'. Raise incident reports for steps 2, 4 and 5.
- D.** Amend step 2 outcome to 'Pass'. Recheck the test documentation for step 4 and raise an incident report of it is correct. Raise an incident report for step 5.

**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?

**Answer Set:**

- A. **Accurate test case execution status information helps stakeholders gain knowledge about the status of the project.**
- B. Accurate test case execution status information helps the developer decide what defects to fix first.
- C. Accurate test case execution status information allows the test manager to evaluate the efficiency of individual test team members.
- D. Accurate test case execution status information allows the test team to validate their coverage.

**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?

**Answer Set:**

- A. **A list of all deferred defects**
- B. A list of all rejected defect reports
- C. A list of all defects found in production and fixed in this release
- D. A list of all resolved defects

**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
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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

**Answer Set:**

- A.** The tracking and measurement of defects, tests, coverage as well as product risks
- B.** How many defects were introduced by each developer so adequate steps may be taken
- C.** The percentage of passed and failed test cases at given points in time whereas the number of executed versus not-executed test cases is less relevant
- D.** How many test cases were passed by each tester so it can be used to motivate to be more effective

**Justification:**

- A.** Correct: these are 4 of the 5 dimensions mentioned in the syllabus.
- B.** Correct: 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 fail.

**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?

**Answer Set:**

- A. Accurate recording of defect information in the defect tracking system**
- B.** Accepting frequent builds from the developers to keep all testers working on the same version at the same time
- C.** Skype meetings for personal interaction
- D.** Weekly, mandatory, all personnel meetings

**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?

**Answer Set:**

- A. Allow access to the system for usability testing during integration**
- B. Review the calculation algorithms and work with specialists to define a data set for calculation tests
- C. Spend time with developers to identify operational scenarios to test performance
- D. Defer usability testing until UAT and recruit visually impaired testers to join the UAT team

**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?

**Answer Set:**

- A. Cause-effect graphs can show only one type of relationship (and, or, is, is not) in the diagram at a time.**
- B.** Cause-effect graphs are used to show the functional logic of the test object visually.
- C.** Cause-effect graphing can be more time-consuming and challenging to learn than other techniques, since they require the use of notation that has been agreed upon with all the parties involved.
- D.** Cause-effect graphs are often created to support the creation of decision tables, but they can easily become too large to be practical.

**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 have 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 many 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?

**Answer Set:**

- A. 3 test cases and a maximum premium of \$475 and minimum premium of \$235
- B. 6 test cases and a maximum premium of \$475 and minimum premium of \$235
- C. 3 test cases and a maximum premium of \$400 and minimum premium of \$275
- D. 4 test cases and a maximum premium of \$400 and minimum premium of \$275

**Justification:**

A. Correct: Parameter 1) and 2): Getting the 10 % reduction for signing pledge of honor and filling out a detailed assessment an 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 non smoker and having a low BMI of less that 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.

**Answer Set:**

- A. 3
- B. 4
- C. 6
- D. 8

**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 everyone 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

**Answer Set:**

- A. 4 tests are needed for a collapsed decision table
- B. 5 tests are needed for a collapsed decision table
- C. **6 tests are needed for a collapsed decision table**
- D. 16 are needed for the not-collapsed decision table
- E. **17 are needed for the not-collapsed decision table**
- F. 18 are needed for the not-collapsed decision table

**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 +  $2 \times 2 \times 2 \times 2$  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**

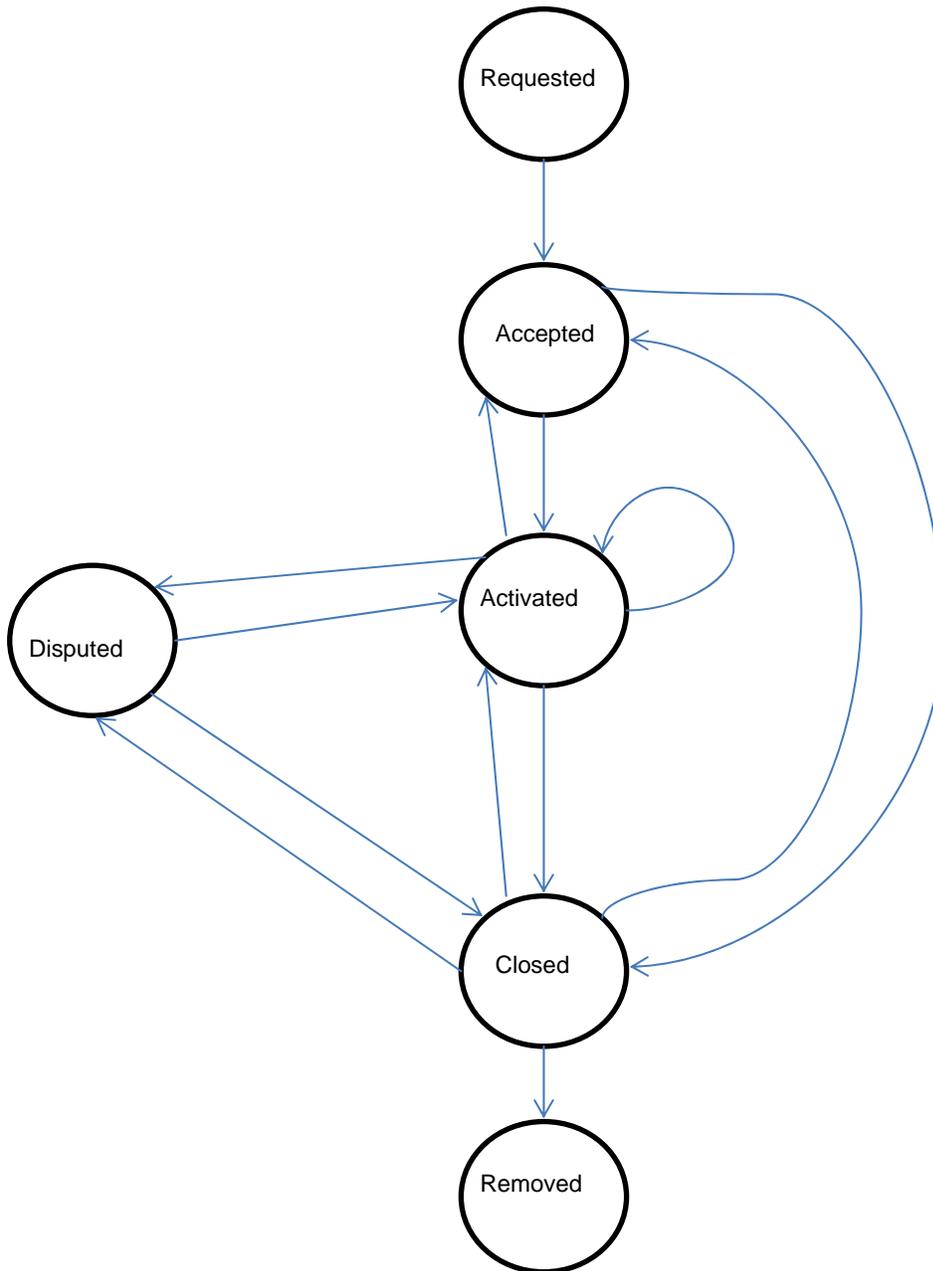
CTAL-ATA \_LO-3.2.5

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

**Answer Set:**

- A. 3 0-switch transitions
- B. 4 0-switch transitions**
- C. 5 0-switch transitions
- D. 8 1-switch transitions
- E. 11 1-switch transitions**
- F. 12 1-switch transitions

**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?

**Answer Set:**

- A. 16
- B. 12
- C. 256
- D. 4

**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?

**Answer Set:**

- A. 6 test cases
- B. 2 test cases
- C. 12 test cases
- D. 3 test cases

**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?

**Answer Set:**

- A. 6
- B. 1
- C. 9
- D. 2

**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?

**Answer Set:**

- A. User stories describe functional and non-functional characteristics of a specific small part of a system that must be tested and demonstrated by the team.**
- B. User stories are stories told by users regarding their experiences in using the system after it has been implemented.
- C. User stories describe all the activities required from a user in order for them to perform a certain functionality.
- D. User stories are an extension to use cases and used in a similar way as a basis for test cases in acceptance testing.

**Justification:**

- A. True, as per definition of a user story in section 3.2.8 in Syllabus.**
- B. False. User stories are part of 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?

**Answer Set:**

	Test 1		Test 2		Test 3		Test 4	
	Wt	Cap	Wt	Cap	Wt	Cap	Wt	Cap
<b>A</b>	<b>5500</b>	<b>450</b>	<b>4700</b>	<b>450</b>	<b>8500</b>	<b>350</b>	<b>4000</b>	<b>600</b>
<b>B</b>	5500	475	4500	575	4800	545	9500	550
<b>C</b>	7500	375	4700	550	4600	560	9600	600
<b>D</b>	4700	350	9500	550	4500	600	9600	600

**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
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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?

**Answer Set:**

- A. State Transition Testing
- B. Classification Tree**
- C. Boundary Value Analysis
- D. Use Story Testing
- E. Equivalence Partitioning**

**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?

**Answer Set:**

- A. Defect-based techniques are based on the analysis and classification of previously found defects.
- B. Defect-based techniques are mainly used at the component test level.
- C. Defect-based techniques concentrate on defects found during the analysis of the documentation of a system.
- D. Defect-based techniques are a sub-category of specification-based 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?

**Answer Set:**

- A. **Verify the tab order of the input fields**
- B. **Verify proper rule checking for validity for date fields**
- C. Verify that access is limited to those with the right permissions
- D. Verify that data is saved accurately to the database
- E. Load test with virtual users entering the equivalent of 1000 transactions in an eight hour period

**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?

**Answer Set:**

- A. **If the testers are experienced and have good knowledge of the system under test, experience-based techniques are a viable alternative to more formal techniques if there are problems with the quality of the documentation or if the project is under a tight schedule.**
- B. Experience-based techniques should generally be used if there are no suitable formal techniques or if it takes too much time and effort to use them.
- C. Experience-based techniques rely on the tester's knowledge and experience and can therefore be used to increase the test coverage as the tester knows which areas need more testing.
- D. If checklists are used, experience-based testing can be more systematic and efficient and can replace specification-based techniques.

**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.

**Answer Set:**

- A. Use debriefing sessions with the test manager or a test lead to record the results of the test sessions
- B. Procure domain knowledge to be applied during the exploratory session
- C. Create test charters and assign time boxes for each planned exploratory session
- D. Log defects into the defect management system but do not record a pass/fail for the exploratory session because duplicating the results could be difficult
- E. Use the less experienced testers on the team to provide a new approach and fresh view to the testing effort
- F. Record the results in email and send the email to the test manager and test lead
- G. Define the test cases to be executed and enter them into the test management tool for tracking

**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?

**Answer Set:**

- A. The Agile team will use Exploratory testing and defect-based testing as the primary testing techniques for stories 1-4. For story 1 decision table testing will also be used, automated configuration testing for story 3 and attack-based testing using a checklist will be used extra for story 4**
- B. The Agile team will use Exploratory testing for story 1-4. For story 1 the specification based techniques: decision and branch testing will also be used, automated configuration testing for story 3 and attack-based testing will be used extra for story 4
- C. The Agile team will use specification based testing as the primary testing technique for story 1-4. For story 1 state transition and boundary value analysis (BVA) will also be used and exploratory testing will be used extra for story 4
- D. The Agile team will use defect based testing as the primary testing technique for story 1-4. For story 1 EP and BVA will also be used and specification based testing will be used as extra technique for story 4

**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 build 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.

**Answer Set:**

- A. Error guessing
- B. Decision table testing**
- C. Usability testing
- D. Use case testing**
- E. State transition testing**
- F. Volume testing
- G. Exploratory testing
- H. Reliability testing

**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?

**Answer Set:**

- A. Saving the passwords becomes too complicated for some users**
- B. Passwords are not saved for all websites which integrate with the component**
- C. Passwords are truncated on some browsers**
- D. 5% of the websites do not run on a specific operating system**

**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.

**Answer Set:**

- A. Testing that the passwords are saved securely on the newly integrated operating system should be performed during component testing.**
- B. Testing that the passwords are saved accurately should be performed during component testing**
- C. Testing that the passwords are saved easily should be performed during acceptance testing
- D. Testing that the passwords are saved accurately for all browsers should be performed during system test
- E. Testing that passwords are saved for all websites that integrate the component should be performed during component testing.

**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 fulfillment 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?

**Answer Set:**

- A. Verify that all stated usability requirements have been met and validate the usability by conducting usability testing in a usability lab with a sample of real users**
- B. Verify the usability by conducting usability testing in a usability lab with a sample of real users and validate the usability by releasing the product because it is a time-critical product that must be released within the market window**
- C. Verify the usability by conducting formative usability testing and validate the usability by simulating a realistic load in the lab environment and verifying the user experience with the response time**
- D. Verify the usability by running a side-by-side feature comparison with the existing production version and validate the usability by developing a prototype that can used for review with the sales people**

**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.

**Answer Set:**

- A. **Prior to the requirements review, you read the requirements document, checking that the requirements are unambiguous, complete and testable. The more defects found and fixed at this stage, the less found later on.**
- B. **In preparation for the integration test plan review, you read the architecture specification in order to consider dependencies between the components that are being integrated, so that the integration is performed efficiently.**
- C. During a system test plan review, you review the defects found during component test, to determine which components need more testing, and which test techniques would be most useful.
- D. For the system test plan review, you create user stories which will be used to see whether the system will be tested in the same way it will be used.
- E. In preparation for component test design review, you read the design document and the code of the component being developed and tested, in order to ensure that testing covers everything.

**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.

**Answer Set:**

- A. The main path in the use case is clearly defined.**
- B. All alternative paths are clearly identified.
- C. User interface messages are defined.
- D. There is only one main path in the use case**
- E. Each path (main and alternatives) is testable.

**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: <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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).</li> <li>• It must be possible to change between the Transaction screen and User information screen with the “Swap screen” –button.</li> <li>• The layout of the screen is described in more detail in a separate document.</li> <li>• 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.</li> <li>• More details about the performance requirements can be found in a separate performance requirements specification document.</li> </ul>

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?

**Answer Set:**

- A. 4, 6, 7
- B. 1, 2, 3
- C. 2, 4, 5
- D. 3, 5, 7

**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?

**Answer Set:**

- A. By eliminating defects as early as possible to minimize defect propagation
- B. By ensuring that the deliverables from any life cycle phase are tested only in that phase
- C. By using specific test techniques at each level and only at that level
- D. By concentrating the testing effort on the phases where failures occur.

**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?

**Answer Set:**

- A. **Expected results**
- B. Steps to reproduce the defect
- C. Test data used to identify the fault
- D. **Level of load on the system at the time of failure**
- E. Actual results

**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?

**Answer Set:**

- A. **Defects outstanding by severity, project phase in which the defect was introduced (e.g. requirements, design), symptom (i.e. what aspect of the system is affected)**
- B. Defects outstanding by priority, project phase in which the defect was detected, suspected cause of defect (e.g. requirements, design)
- C. Project activity that resulted in the defect being detected (e.g. review, inspection), total defects by severity, work product in which the mistake was made
- D. Symptom (i.e. what aspect of the system is affected), outstanding defects by priority, suspected cause of defect (e.g. requirements, design)

**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?

**Answer Set:**

- A. **It helps identify root causes that are responsible for a significant amount of defects**
- B. It applies an industry standard taxonomy of the known root causes that result in the creation of defects
- C. Often, a large number of defects are caused by unclear requirements
- D. It promotes discussion between the tester and the developer

**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?

**Answer Set:**

- A. **The tool will generate the combinations of the specified options that the Test Analyst should test**
- B. The tool will create the list of the inputs to be tested and the expected results
- C. The tool will create test scenarios that will achieve 100% coverage of the specified combinations
- D. The tool will generate automated test code that can then be executed by the Test Analyst

**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?

**Answer Set:**

- A. **Identify the key business processes that must be tested**
- B. Write the code to automate the key processes
- C. Work with the users to define the key usability aspects of the software
- D. Write manual tests for the key business processes that can then be automated

**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?

**Answer Set:**

- A. Run the same test case manually to see if it fails
- B. Alter the data and run the test again
- C. Call the Technical Test Analyst to troubleshoot it
- D. Write a defect report

**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**