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

Version 1.03

International Software Testing Qualifications Board

Revision History

Version	Date	Remarks
Version 1.00	2012/10/19	Version for voting
Version 1.01	2013/03/15	Version for release
Version 1.02	2016/12/08	Split of document into Questions and Justifications

Certified Tester
Advanced Level Syllabus – Test Manager

ISTQB®

International
Software Testing
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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. ATM Sample Questions

CTAL-ATM _LO-1.2.1

TM-1.2.1 (K4) Analyze the test needs for a system in order to plan test activities and work products that will achieve the test objectives

Question:
You are the Test Manager working on a project developing a tourist information mobile application. The project recently switched to an agile process and test driven development. Each development cycle lasts 15 days, with daily builds beginning at day 7. After day 10, no new features are allowed to be added. The development team is composed of very experienced team members, who are proud of their work, but not tolerant of the testing team. The requirements are written down as coarse grained user stories like the following one:

> **US 03-30: Search nearest matching hotel**
> *As a casual user at an unfamiliar location I want to get information on the nearest hotel matching my financial and comfort profile best.*
> **Priority:** *High;* **Estimate:** *7 (out of 10)*

The software depends on existing web services, which are stubbed during development. Unit testing is done by developers, while system and user acceptance testing is the testing team's responsibility. System test in earlier development cycles was often blocked due to severe failures of newly developed features. Analysis shows that many of these failures could have been found during unit test. Analysis of issues found during production show that 30% of performance problems were due to unreliable web services delivered by 3rd party suppliers.

Primary test objectives are to mitigate the perceived performance risks and to increase the confidence that no failures with high severity will occur in user stories with priority >= High. Moreover, upper management demanded for closer cooperation of testers and developers.

Which THREE of the following test activities and/or work products will achieve the test objectives best.

Justification:
- **A.** Correct: Performance. tests must be conducted; system not stable before day 10.
- **B.** Correct: To reduce blocking failures after unit test and to improve communication between developer and tester.
- **C.** Correct: 30% of performance issues are reported in relationship to web services. These (or some of them) may be due to undefined SLA.
- **D.** Incorrect: Performance. tests are OK, but the 30% issues will only be found on system level with real services used.
- **E.** Incorrect: Unit testing is under the hood of development.
- **F.** Incorrect: There is no integration test level.
- **G.** Incorrect: TDD starts with unit test case design; in agile processes, normally there are no detailed design specifications.

Point Value: 3

TM-1.3.1 (K3) Use traceability to check completeness and consistency of defined test conditions with respect to the test objectives, test strategy, and test plan

Question:
You are the Test Manager working on a project developing a tourist information mobile application. The project recently switched to an agile process and test driven development. Each development cycle lasts 15 days, with daily builds beginning at day 7. After day 10, no new features are allowed to be added. The development team is composed of very experienced team members, who are proud of their work, but not tolerant of the testing team. The requirements are written down as coarse grained user stories like the following one:

US 03-30: Search nearest matching hotel

As a casual user at an unfamiliar location I want to get information on the nearest hotel matching my financial and comfort profile best.

Priority: *High;* **Estimate:** *7 (out of 10)*

The software depends on existing web services, which are stubbed during development. Unit testing is done by developers, while system and user acceptance testing is the testing team's responsibility. System test in earlier development cycles was often blocked due to severe failures of newly developed features. Analysis shows that many of these failures could have been found during unit test. Analysis of issues found during production show that 30% of performance problems were due to unreliable web services delivered by 3rd party suppliers.

Primary test objectives are to mitigate the perceived performance risks and to increase the confidence that no failures with high severity will occur in user stories with priority >= High. Moreover, upper management demanded for closer cooperation of testers and developers.

The following exit criteria for acceptance testing have been specified:
AC 1: Software response time <= 3 sec for up to 1,000 simultaneous requests of user stories with priority = Very High

AC 2: Software response time <= 10 sec for up to 10,000 simultaneous requests of user stories with priority >= High

AC 3: No severe failure in system and user acceptance test of user stories with priority >= High

AC 4: All user stories covered by at least one user acceptance test case

In the test strategy, equivalence partitioning is required for the system and acceptance testing of user stories with priority >= High.
For this development cycle, the following user stories were selected and implemented:
(P = Priority; E = Estimated Effort)
US 02-10: Play video for selected hotel (P: Medium; E: 4)
US 02-20: Play background music (P: Low; E: 2)
US 03-20: Search for five nearest hotels (P: Very High; E: 4)
US 03-30: Search for nearest matching hotel (P: High; E: 7)

Test analysis for system testing has just begun and the following test conditions have been identified:
TC 02-10-1: Play video, use all supported formats
TC 03-20-1: List 5 nearest hotels, use equivalence partitioning for location
TC 03-30-1: List nearest matching hotel, use equivalence partitioning for user profile and location
TC PE-xx-1: Performance tests for up to 10,000 simultaneous requests of user story US 03-30

TC PE-xx-2: Performance tests for up to 1,000 simultaneous requests of user story US 03-20

What is the MINIMUM number of test conditions that must be added to fulfill all exit criteria in this cycle?

Justification:
    A. Correct
    1) Performance tests with maximum allowed response time 10 secs for up to 10,000 simultaneous requests of user story US 03-20 are missing
    2) A test condition for user story US 02-20 is missing.

    B, C & **D** are incorrect

Point Value: 2

CTAL-ATM _LO-1.3.2

TM-1.3.2 (K2) Explain the factors that might affect the level of detail at which test conditions may be specified and the advantages and disadvantages for specifying test conditions at a detailed level

Question:
Which TWO of the following factors indicate most that detailed test conditions should be specified for system testing?

Justification:
    A. Correct: specifying detailed test conditions could act in place of a poor test basis and contribute to defect prevention.
    B. Correct: questions at test design to refine coarse grained test conditions would be expensive to answer.
    C. Incorrect: Detailed test conditions would be hard to maintain (Syll.).
    D. Incorrect: questions at test design to refine coarse grained test conditions could be answered by domain experts.
    E. Incorrect: Management doesn't general require that level of detail.

Point Value: 1

TM-1.4.1 (K3) Use traceability to check completeness and consistency of designed test cases with respect to the defined test conditions

Question:

Scenario 1:

Assume that you are working for an ambitious start-up. They are creating a system that will provide customized loyalty and rewards programs for small- and medium-sized companies selling to customers on the Web. These companies enroll themselves on the system's web store. This allows the companies to create customized buttons, to be placed on their websites, that let customers enroll in the companies' loyalty and rewards program. Each subsequent purchase earns points, and both companies and their customers can manage the program; for example, to determine the number of points required to receive a free product or service.

Your employer's marketing staff are heavily promoting the system, offering aggressive discounts on the first year's fees to sign up inaugural companies. The marketing materials state that the service will be highly reliable and extremely fast for companies and their customers.

At this time, the requirements are complete, and development of the software has just begun. The current schedule will allow companies and their customers to start enrolling in three months.

Your employer intends to use cloud computing resources to host this service, and to have no hardware resources other than ordinary office computers for its developers, testers, and other engineers and managers. Industry-standard web-based application software components will be used to build the system.

Consider the following risk item that was identified during the quality risk analysis process:

> **Customized enrollment buttons for a company's website are not assigned the correct URL for that company's loyalty program.**

Assume that you have used traceability to determine the logical test cases that cover this risk item. Which of the following is a positive logical test that is complete, is correct, and covers this risk item?

Justification:
A. Correct: has the input to occur, the correct expected result per the scenario, and relates to the risk item.
B. Incorrect: has the wrong expected result and so it incorrect.
C. Incorrect: might cover this risk item, but it is a negative test and also does not contain an expected result; it's a good exploratory negative test for this risk item, though.
D. Incorrect: is a perfectly good positive logical test, but does not cover the risk item.

Point Value: 2

TM-1.5.1 (K3) Use risks, prioritization, test environment and data dependencies, and constraints to develop a test execution schedule which is complete and consistent with respect to the test objectives, test strategy, and test plan

Question:

Scenario 1:

Assume that you are working for an ambitious start-up. They are creating a system that will provide customized loyalty and rewards programs for small- and medium-sized companies selling to customers on the Web. These companies enroll themselves on the system's web store. This allows the companies to create customized buttons, to be placed on their websites, that let customers enroll in the companies' loyalty and rewards program. Each subsequent purchase earns points, and both companies and their customers can manage the program; for example, to determine the number of points required to receive a free product or service.

Your employer's marketing staff is heavily promoting the system, offering aggressive discounts on the first year's fees to sign up inaugural companies. The marketing materials state that the service will be highly reliable and extremely fast for companies and their customers.

At this time, the requirements are complete, and development of the software has just begun. The current schedule will allow companies and their customers to start enrolling in three months.

Your employer intends to use cloud computing resources to host this service, and to have no hardware resources other than ordinary office computers for its developers, testers, and other engineers and managers. Industry-standard web-based application software components will be used to build the system.

You are following a risk-based testing strategy, where likelihood and impact are both assessed on a five-point scale ranging from very low to very high. Consider the following risk item that was identified during the quality risk analysis process:

> **Customized enrollment buttons for a company's website are not assigned the correct URL for that company's loyalty program.**

Assume that technical project stakeholders have assessed the likelihood of this risk at a medium level.

Given only the information above, which of the following statements is certainly true?

Justification:
- **A.** Correct: this risk relates to the core functionality of the application.
- **B.** Incorrect: tests with very high impact and higher likelihood should run before this test.
- **C.** Incorrect: is not certainly true because we don't know how this risk item relates to other risk items.
- **D.** Incorrect: is not certainly true because we don't know how effort allocation is determined based on combined impact and likelihood.

Point Value: 2

CTAL-ATM _LO-1.6.1

TM-1.6.1 (K3) Use traceability to monitor test progress for completeness and consistency with the test objectives, test strategy, and test plan

Question:

In a given company, testing is expected to follow a risk-based testing strategy. Assume the project is currently in test execution. For the following tests, the values given represent the test identifier, the risk level, the identifier for the requirement covered by the test, and the current test status, respectively.

Test ID	Risk Level	Requirement ID	Status
02.007	Very high	09.003	Fail
02.010	High	09.003	Ready to run
02.019	Very low	09.020	Pass

Which TWO of the following statements are true?

Justification:
  - **A.** Correct: higher-risk tests precede lower-risk tests in risk-based testing strategies.
  - **B.** Correct: 02.019 covers a different requirement than 02.010.
  - **C.** Incorrect: the situation in option B, or perhaps simply blockage of tests, can explain running tests out of risk order.
  - **D.** Incorrect: while evaluating problems with test sequencing makes sense, there is no need to stop running tests while doing so.
  - **E.** Incorrect: finding defects is not the only objective of testing.

Point Value: 2

CTAL-ATM _LO-1.7.1

TM-1.7.1 (K2) Explain the importance of accurate and timely information collection during the test process to support accurate reporting and evaluation against exit criteria

Question:
Which TWO of the following metrics are best suited to be included in a test progress report for unit test execution?

Justification:
  - **A.** Correct: from syllabus.
  - **B.** Correct: from syllabus.
  - **C.** Incorrect: could not be measured timely.
  - **D.** Incorrect: related to test analysis progress.
  - **E.** Incorrect: could not be measured timely.

Point Value: 1

CTAL-ATM _LO-1.8.1

TM-1.8.1 (K2) Summarize the four groups of test closure activities

Question:
Which ONE of the following is an accurate summary of the test closure activity "test completion check"?

Justification:
   A. Correct: per syllabus section 1.3
   B, C & **D** are incorrect

Point Value: 1

TM-1.8.2 (K3) Implement a project retrospective to evaluate processes and discover areas to improve

Question:

Scenario 1:

Assume that you are working for an ambitious start-up. They are creating a system that will provide customized loyalty and rewards programs for small- and medium-sized businesses selling to customers on the web. These companies enroll themselves on the system's web store. This allows the companies to create customized buttons, to be placed on their websites, that let customers to enroll in the companies' loyalty and rewards program. Each subsequent purchase earns points, and both companies and their customers can manage the program; for example, to determine the number of points required to receive a free product or service.

Your employer's marketing staff is heavily promoting the system, offering aggressive discounts on the first year's fees to sign up inaugural companies. The marketing materials state that the service will be highly reliable and extremely fast for companies and their customers.

At this time, the requirements are complete, and development of the software has just begun. The current schedule will allow companies and their customers to enroll starting in three months.

Your employer intends to use cloud computing resources to host this service, and to have no hardware resources other than ordinary office computers for its developers, testers, and other engineers and managers. Industry-standard web-based application software components will be used to build the system.

Assume that the project has completed the initial release, and the system has been in use by companies and their customers for a month now. Your team used a blended risk-based, requirements-based, and reactive testing strategy. In the quality risk analysis, button customization was assessed as the lowest-risk area, while enrollment was assessed as the highest-risk area. You are implementing a retrospective for the testing work.

Which THREE of the following areas should be considered in this retrospective?

Justification:
- **A.** Correct: enrollment is a key requirement area, and test retrospectives should check whether defects were missed in such areas under a requirements-based test strategy.
- **B.** Correct: under-estimation of the effort required to test the major functional areas of the product should be checked in a retrospective.
- **C.** Correct: we want to analyze defect information to evaluate whether the quality risk analysis was correct in a retrospective.
- **D.** Incorrect: while this is part of test closure, it is not part of the retrospective.
- **E.** Incorrect: while a good issue to consider in a retrospective, it is a project-wide issue, not a test-related issue.
- **F.** Incorrect: this is supposed to happen during implementation.
- **G.** Incorrect: this is part of test control.

Point Value: 2

CTAL-ATM _LO-2.2.1

TM-2.2.1 (K4) Analyze the stakeholders, circumstances, and needs of a software project or program, including the software development lifecycle model, and identify the optimal test activities

Question:

Scenario 2:

Assume that you are managing the testing of a mature application. This application is an online dating service that allows users: to enter a profile of themselves; to meet people who would be a good match for them; to arrange social events with those people; and, to block people they don't want to contact them.

Consider the following groups of individuals:
- I. Users of the application who are searching for dates
- II. Managers and shareholders of the company
- III. Married couples who used the application to find their mate
- IV. Employees of government agencies

Consider the following list of test activities.
- a. Testing the affinity of matches proposed by the application
- b. Testing the ability of the application to charge users correctly
- c. Testing the ability of the application to comply with local tax regulations

Based only on the information given here, which of the following statements correctly matches current stakeholders with one or more their testing interest?

Justification:
- **A.** Correct: users care about receiving the service they are paying for, at the agreed price; managers and stakeholders must care about all three types of tests, so that they have satisfied customers, a profitable company, and legal compliance; government agents care about compliance with the rules; and, married couples are not current stakeholders.
- **B.** Incorrect: married customers are not current customers (unless they are cheating on their spouse) and thus shouldn't really care if invoicing is working correctly.
- **C.** Incorrect: government employees wouldn't really care about how well the matching works, except for those employees who are users of the application (which has nothing to do with being an employee of a government agency).
- **D.** Incorrect: the users really don't have much concern about whether the company is paying the proper taxes, as long as the user is being charged properly.

Point Value: 3

CTAL-ATM _LO-2.2.2

TM-2.2.2 (K2) Understand how software development lifecycle activities and work products affect testing, and how testing affects software development lifecycle activities and work products

Question:
Which of the following statements correctly reflects the way project management work products affect testing

Justification:
- **A.** Correct: the test plan must be consistent with the larger project plan.
- **B.** Incorrect: B is a true statement, but is about how testing affects a project management work product, not how a project management work product affects testing.
- **C.** Incorrect: requirements are not a project management work product and, in addition, this statement is only true when following a requirements-based testing strategy.
- **D.** Incorrect: D is a true statement as well, but not about project management affecting testing, but rather testing affecting technical support

Point Value: 1

CTAL-ATM _LO-2.2.3

TM-2.2.3 (K2) Explain ways to manage the test management issues associated with experience-based testing and non-functional testing

Question:
Which ONE of the following statements describes an appropriate approach to managing non-functional testing?

Justification:
- **A.** Correct: From the syllabus.
- **B.** Incorrect: Only <u>some</u> test planning can be delegated to <u>both</u> TAs and TTAs.
- **C.** Incorrect: All non-functional testing does not have to follow functional testing (but it should be based on perceived risks).
- **D.** Incorrect: Some non-functional risks may be mitigated early, but some may be mitigated later in the life cycle.

Point Value: 1

CTAL-ATM _LO-2.3.1

TM-2.3.1 Explain the different ways that risk-based testing responds to risks

Question:
Which ONE of the following statements BEST describes how risk-based testing responds to risks?

Justification:
- **A.** Correct: From syllabus
- **B.** Incorrect: Testing measures quality – it does not improve it (subsequent debugging would do).
- **C.** Incorrect: There is no correlation between risk types (although these are both the same risk type) and functional/non-functional testing.
- **D.** Incorrect: Project risks do help determine which test levels, but so do product risks.

Point Value: 1

CTAL-ATM _LO-2.3.2

TM-2.3.2 (K2) Explain, giving examples, different techniques for product risk analysis

Question:
Which of the following statements are examples of different techniques for analyzing the risks to product quality?

Justification:
- **A.** Correct: as these are four of the eight different techniques given in the syllabus.
- **B.** Incorrect: these are the four activities in risk-based testing.
- **C.** Incorrect: these are techniques for risk identification, which is only part of the analysis process.
- **D.** Incorrect: this is one of the factors influencing the likelihood of a risk item.

Point Value: 1

CTAL-ATM _LO-2.3.3

TM-2.3.3 (K4) Analyze, identify, and assess product quality risks, summarizing the risks and their assessed level of risk based on key project stakeholder perspectives.

Question:

Scenario 1:

Assume that you are working for an ambitious start-up. They are creating a system that will provide customized loyalty and rewards programs for small- and medium-sized companies selling to customers on the Web. These companies enroll themselves on the system's web store. This allows the companies to create customized buttons, to be placed on their websites, that let customers enroll in the companies' loyalty and rewards program. Each subsequent purchase earns points, and both companies and their customers can manage the program; for example, to determine the number of points required to receive a free product or service.

Your employer's marketing staff are heavily promoting the system, offering aggressive discounts on the first year's fees to sign up inaugural companies. The marketing materials state that the service will be highly reliable and extremely fast for companies and their customers.

At this time, the requirements are complete, and development of the software has just begun. The current schedule will allow companies and their customers to start enrolling in three months.

Your employer intends to use cloud computing resources to host this service, and to have no hardware resources other than ordinary office computers for its developers, testers, and other engineers and managers. Industry-standard web-based application software components will be used to build the system.

Which THREE of the following are product quality risks for this system?

Justification:
   A. Correct: we are promising high reliability and reliability is a quality characteristic.
   B. Correct: calculating loyalty points is a function of the system and functional accuracy is a quality sub-characteristic.
   C. Correct: enrolling in company loyalty programs is a function of the system and functional accuracy is a quality sub-characteristic.
   D. Incorrect: is a project risk (and a very real one for any start-up).
   E. Incorrect: is a project risk, and requires the candidate to make the subtle distinction between the immediate potential effects of the risk (widespread collateral damage to the project) from the various consequences should the risk become an outcome (which includes various quality-related problems).
   F. Incorrect: is a project risk, not a quality risk, and it's also of vanishingly small likelihood given the amazing range of options available in the cloud computing retail market.
   G. Incorrect: is definitely a risk, but it's not related to the quality of the system, but rather due to the discounts being offered; specifically, it's an operational risk that can arise after release.

Point Value: 3

CTAL-ATM _LO-2.3.4

TM-2-3.4 (K2) Describe how identified product quality risks can be mitigated and managed, appropriate to their assessed level of risk, throughout the lifecycle and the testing process

Question:
Which ONE of the following statements is the LEAST appropriate description of how identified product quality risks should be mitigated and managed?

Justification:
   A. Correct: We always want test effectiveness (e.g. ability to detect defects) to be high no matter what level of risk is being mitigated.
   B, C & **D** are incorrect: From syllabus.

Point Value: 1

CTAL-ATM _LO-2.3.5

TM 2.3.5 - (K2) Give examples of different options for test selection, test prioritization and effort allocation

Question:
Which ONE of the following is NOT a practical technique for test prioritization and effort allocation?

Justification:
   A. Correct: We do not want to leave all prioritization and effort allocation to individual testers, and also discovery of defects can only occur after testing (and so some prioritization and effort allocation) has already started.
   B, C & **D** are incorrect. From syllabus.

Point Value: 1

TM-2.4.1 (K4) Analyze given samples of test policies and test strategies, and create master test plans, level test plans, and other test work products that are complete and consistent with these documents

Question:

Scenario 2:

Assume that you are managing the testing of a mature application. This application is an online dating service that allows users: to enter a profile of themselves; to meet people who would be a good match for them; to arrange social events with those people; and, to block people they don't want to contact them.

Assume that the test policy defines the following mission for the test organization, in priority order:

1. Find defects
2. Reduce risk
3. Build confidence

Assume further that your manager has defined the highest priority test process improvement for the test organization in the coming year to be achieving maximum possible automation of the regression tests for the application.

Which of the following statements is correct?

Justification:

    A. Correct: for a mature application, the main mission of testing is really building confidence that the application continues to work properly. Automated regression testing helps achieve that efficiently, so the test process improvement and the application are aligned. While the idea of automating the regression testing for this mature application is a good one, automation does not tend to find many defects. So, the mission statement is not aligned with the test process improvement, or with the real test needs of a mature application.

    B, C & **D** are incorrect for the reasons stated for A.

Point Value: 2

TM-2.2.4 (K4) For a given project, analyze project risks and select appropriate risk management options (i.e., mitigation, contingency, transference, and/or acceptance)

Question:

Scenario 1:

Assume that you are working for an ambitious start-up. They are creating a system that will provide customized loyalty and rewards programs for small- and medium-sized businesses selling to customers on the web. These companies enroll themselves on the system's web store. This allows the companies to create customized buttons, to be placed on their websites, that let customers to enroll in the companies' loyalty and rewards program. Each subsequent purchase earns points, and both companies and their customers can manage the program; for example, to determine the number of points required to receive a free product or service.

Your employer's marketing staff is heavily promoting the system, offering aggressive discounts on the first year's fees to sign up inaugural companies. The marketing materials state that the service will be highly reliable and extremely fast for companies and their customers.

At this time, the requirements are complete, and development of the software has just begun. The current schedule will allow companies and their customers to enroll starting in three months.

Your employer intends to use cloud computing resources to host this service, and to have no hardware resources other than ordinary office computers for its developers, testers, and other engineers and managers. Industry-standard web-based application software components will be used to build the system.

Assume that you are writing a master test plan for this project, and are currently working on the project risks section of the plan.

Which of the following topics should NOT be addressed in this section of the test plan?

Justification:
- **A.** Correct: while this is a significant project risk, it is not a test-related project risk. What the test team needs from the marketing team—the requirements—are already complete.
- **B.** Incorrect: problems with test environment readiness are classic test-related project risks.
- **C.** Incorrect: problems with test staff availability and qualification are classic test-related project risks.
- **D.** Incorrect: problems with tool readiness are classic test-related project risks.

Point Value: 2

TM-2.4.3 (K2) Describe, giving examples, how test strategies affect test activities

Question:
Consider the following test strategies
I. Analytical test strategy
II. Methodical test strategy
III. Process-compliant test strategy
IV. Consultative test strategy

Consider the following examples of test activities.
1. Testing a user-provided list of Internet browsers
2. Defining acceptance criteria for a user story
3. Executing the highest-risk tests as early as possible
4. Clicking through all the navigational links on a web page

Which of the following correctly matches test strategies with an example of a test activity appropriate for that strategy?

Justification:
- **A.** Correct: because analytical risk based testing includes risk-based test prioritization, methodical testing follows a checklist (which in this example includes traversing links on a site), process-compliant testing can include Agile process compliance, and consultative testing involves being externally-directed.
- **B, C** and **D** are all incorrect because at least two of these examples are mismatched.

Point Value: 1

CTAL-ATM _LO-2.4.4

TM-2.4.4 (K3) Define documentation norms and templates for test work products that will fit organization, lifecycle, and project needs, adapting available templates from standards bodies where applicable

Question:
Scenario 3

Assume you are a test manager on a project which is following an Agile lifecycle. The testing strategy is a blend of risk-based testing, process-compliant testing, and reactive testing. Developers are following known Agile best practices, including automated unit testing and continuous integration.

You are defining guidelines for documenting various test work products.

Which of the following statements is true?

Justification:
   A. Correct: Agile lifecycles emphasize lightweight documentation.
   B. Incorrect: the process being compliant with in this case is Agile methodology, not IEEE 829.
   C. Incorrect: IEEE 829 is documentation-heavy and thus incompatible with Agile philosophies on documentation and with reactive test strategies.
   D. Incorrect: even reactive tests have charters and even Agile lifecycles have acceptance criteria.

Point Value: 2

CTAL-ATM _LO-2.5.1

TM-2.5.1 (K3) For a given project, create an estimate for all test process activities, using all applicable estimation techniques

Question:
Scenario 3

Assume you are a test manager on a project which is following an Agile lifecycle. The testing strategy is a blend of risk-based testing, process-compliant testing, and reactive testing. Developers are following known Agile best practices, including automated unit testing and continuous integration.

You are estimating the system test effort required for a particular iteration by your test team.

Which THREE of the following statements correctly describe how you should carry out estimation in this scenario?

Justification:
   A. Correct: considering historical averages for estimation is one recognized estimation technique.
   B. Correct: this is a common technique for managing experience-based testing, and has estimation implications.
   C. Correct: testers participate as members of Agile teams, including in estimation.
   D. Incorrect: test estimation should include all activities in the test process.
   E. Incorrect: as cited in the syllabus, developers following known Agile best practices will remove as many as half the defects prior to system testing.
   F. Incorrect: Agile methods eschew highly-detailed documentation, including test documentation.
   G. Incorrect: there is nothing in the scenario to make this re-use necessary or likely.

Point Value: 3

CTAL-ATM _LO-2.5.2

TM-2.5.2 (K2) Understand and give examples of factors which may influence test estimates

Question:
Which ONE of the following will most probably influence the duration, but not the effort of the testing activities?

Justification:
  A. Correct: defect repair time may delay testing but do not require test effort.
  B. Incorrect: Even mature test processes could last long, if effort is high.
  C. Incorrect: Detailed test conditions demand effort.
  D. Incorrect: High quality systems demand more testing effort.

Point Value: 1

CTAL-ATM _LO-2.6.1

TM-2.6.1 (K2) Describe and compare typical testing related metrics

Question:
Which one of the following statements about testing metrics usage is TRUE?

Justification:
  A. Correct: that is one of the test progress monitoring metrics. All of them are test metrics but used for a different thing.
  B. Incorrect: refers to dangerous use of that metric.
  C. Incorrect: is really monitoring progress of test analysis.
  D. Incorrect: is a metric to monitor progress of planning and control

Point Value: 1

CTAL-ATM _LO-2.6.2

TM-2.6.2 (K2) Compare the different dimensions of test progress monitoring

Question:
Which one of the following alternatives is best to monitor test progress?

Justification:
  A. Correct: it mentions three of the five main dimensions of test progress metrics.
  B. Incorrect: combines wrong coverage to number of executed tests.
  C. Incorrect: includes people category, which is unlikely to be used for test progress monitoring; also, people and product are not listed in the five main dimensions of test progress metrics.
  D. Incorrect: includes people category, which is unlikely to be used for test progress monitoring.

Point Value: 1

CTAL-ATM _LO-2.6.3

TM-2.6.3 (K4) Analyze and report test results in terms of the residual risk, defect status, test execution status, test coverage status, and confidence to provide insight and recommendations that enable project stakeholders to make release decisions

Question:
You work for an international company producing hardware and software for telecom networks. Hardware and software development are done in separate business units. You are the test manager of one product line of network router software.

In your product line, there is a long tradition of creating tightly integrated products using an incremental product lifecycle. The hardware business unit produces a new version every six month. Your software product line aims to have a new version of the software ready for each new hardware version. The software is developed in two-month increments.

The business unit schedules are synchronized during design.

Your team consists of 15 testers, who have been in the company for a minimum of two years, but mostly a lot longer. New tests are developed by the most experienced testers using in-house custom test scripts. Variations of tests and the regression test sets are run by the rest of the team.

The company management requires monthly progress reports listing the number of severe defects found and the status of test execution. There have also been efforts to measure the efficiency of personnel in all business units. Your company has also implemented CMMI on company level.

There have been problems to keep up with the hardware development schedule.

The business unit manager of your software business unit has asked you to propose how to improve the testing of the project, e.g. by introducing better metrics or tools. The manager has quickly collected product risk list from user representatives and thinks the tests don't cover all the risks.

Which one of the following alternatives would you recommend to be done?

Justification:
   A. Correct: it combines using more different dimensions of test progress monitoring and starts looking into the probably real reason of test coverage versus effort spent leading to remaining product risks.
   B. Incorrect: B is all right but no analysis involved, shouldn't work on intuition only.
   C. Incorrect: focuses wrongly on capabilities.
   D. Incorrect: is all right on its own but it doesn't utilize the risk information.

Point Value: 2

CTAL-ATM _LO-2.7.1

TM-2.7.1 (K2) Give examples for each of the four categories determining the cost of quality

Question:
Consider the following categories of quality costs:
    a. Costs of prevention.
    b. Costs of detection.
    c. Costs of internal failure.
    d. Costs of external failure.

Consider the following examples of quality costs:
    1. Performing a quality risk analysis
    2. Training business analysts in requirements engineering.
    3. Customers complain about poor performance.
    4. Long lag time from defect reporting to resolution during testing increase defect management inefficiency.

Which of the following correctly matches each category with an example?

Justification:
A. Correct: Training the BAs is a cost of prevention because it helps write higher-quality requirements; quality risk analysis is a detection cost because you'd incur this cost even if you found no defects; any defect-related cost of quality incurred during testing and prior to release is a cost of internal failure, even avoidable costs; customer complaints is a cost of external failure because these customer complaints result in decreased future sales.

B, C & **D** are incorrect because see A.

Point Value: 1

CTAL-ATM _LO-2.7.2

TM-2.7.2 (K3) Estimate the value of testing based on cost of quality, along with other quantitative and qualitative considerations, and communicate the estimated value to testing stakeholders

Question:

Scenario 2:

Assume that you are managing the testing of a mature application. This application is an online dating service that allows users: to enter a profile of themselves; to meet people who would be a good match for them; to arrange social events with those people; and, to block people they don't want to contact them.

Assume that you have calculated the following costs of quality:

- Average cost of detection: $150
- Average cost of internal failure: $250
- Average cost of external failure: $5,000

The average costs of detection and internal failure are calculated using the number of bugs found prior to release, while the average costs of external failure is calculated using the number of bugs found after release.

Which of the following statements is correct?

Justification:
- **A.** Correct: $5,000 – ($150 + $250) = $4,600.
- **B.** Incorrect: you can't add averages to calculate a total, and besides you weren't given the cost of prevention.
- **C.** Incorrect: cost of quality can be used to calculate the value of any quality-related activity, and is so used in industries around the world.
- **D.** Incorrect: you have to subtract the average costs of detection and internal failure associated with testing to calculate the net potential savings, rather than adding those costs.

Point Value: 2

TM-2.8.1 (K2) Understand the factors required for successful use of distributed, outsourced, and insourced test team staffing strategies

Question:

Assume that you are working for an ambitious start-up. They are creating a system that will provide customized loyalty and rewards programs for small- and medium-sized companies selling to customers on the Web. These companies enroll themselves on the system's web store. This allows the companies to create customized buttons, to be placed on their websites, that let customers enroll in the companies' loyalty and rewards program. Each subsequent purchase earns points, and both companies and their customers can manage the program; for example, to determine the number of points required to receive a free product or service.

Your employer's marketing staff is heavily promoting the system, offering aggressive discounts on the first year's fees to sign up inaugural companies. The marketing materials state that the service will be highly reliable and extremely fast for companies and their customers.

At this time, the requirements are complete, and development of the software has just begun. The current schedule will allow companies and their customers to start enrolling in three months.

Your employer intends to use cloud computing resources to host this service, and to have no hardware resources other than ordinary office computers for its developers, testers, and other engineers and managers. Industry-standard web-based application software components will be used to build the system.

In order to reduce testing cost by limiting the number of employees in the test team, senior management has decided to engage an outsource testing services firm to handle some of the testing. While the actual testing work will be done in Malaysia, this firm will put a person on-site to directly coordinate the work, communicate test results, and be in twice-daily contact with the offshore test team.

Which of the following factors of success for distributed and outsourced testing is addressed in this plan?

Justification:
- **A.** Correct: an onsite person will act as the channel of communication.
- **B.** Incorrect: there is no indication that any factor other than cost was used to select the outsource testing services firm.
- **C.** Incorrect: there is no clear division of work between the teams
- **D.** Incorrect: the decision about the use of this offshore team was imposed top-down, corroding trust from the very start.

Point Value: 1

CTAL-ATM _LO-2.9.1

TM 2.9.1 - (K2) Summarize sources and uses of standards for software testing

Question:
Which ONE of the following BEST describes a software standard that provides guidance on test coverage criteria to be achieved?

Justification:
- **A.** Correct: From syllabus.
- **B.** Incorrect: Not a standard – does not provide guidance on test coverage criteria.
- **C.** Incorrect: A generic process improvement model – does not provide guidance on test coverage criteria.
- **D.** Incorrect: A generic project management framework – does not provide guidance on test coverage criteria.

Point Value: 1

CTAL-ATM _LO-3.2.1

TM-3.2.1 (K2) Understand the key characteristics of management reviews and audits

Question:
As a test manager, you are participating in a meeting with other members of the project management team. The agenda of the meeting is to discuss whether the project can begin acceptance testing based on the system test exit criteria, the acceptance test entry criteria, and other business considerations. Which of the following statements is true?

Justification:
- **A.** Correct: we are using the criteria to assess status and, based on that assessment, to decide future actions, which are actions that the syllabus says belong in a management review.
- **B.** Incorrect: while we are indeed checking against defined criteria, there is no independent evaluation of compliance (the checking is being done by the project team) and there's no indication that "evidence" is being checked.
- **C.** Incorrect: while the statement is in a sense true, it misses the element of decision-making by management peers, which is the key reason that this is a management review rather than an audit.
- **D.** Incorrect: while a pass/fail assessment of the criteria might well occur, as with B, there is no independent evaluation of compliance.

Point Value: 1

TM 3.3.1 (K4) Analyze a project to select the appropriate review type, and to define a plan for conducting reviews, in order to ensure proper execution, follow up, and accountability

Question:

Scenario 1:

Assume that you are working for an ambitious start-up. They are creating a system that will provide customized loyalty and rewards programs for small- and medium-sized companies selling to customers on the Web. These companies enroll themselves on the system's web store. This allows the companies to create customized buttons, to be placed on their websites, that let customers enroll in the companies' loyalty and rewards program. Each subsequent purchase earns points, and both companies and their customers can manage the program; for example, to determine the number of points required to receive a free product or service.

Your employer's marketing staff is heavily promoting the system, offering aggressive discounts on the first year's fees to sign up inaugural companies. The marketing materials state that the service will be highly reliable and extremely fast for companies and their customers.

At this time, the requirements are complete, and development of the software has just begun. The current schedule will allow companies and their customers to start enrolling in three months.

Your employer intends to use cloud computing resources to host this service, and to have no hardware resources other than ordinary office computers for its developers, testers, and other engineers and managers. Industry-standard web-based application software components will be used to build the system.

Assume that you have been asked by the senior management team to plan for reviews as part of this project. They want a very lightweight process that nonetheless provides for some early defect detection as well as building consensus and understanding across the team.

Which of the following answers describes the BEST option in this situation?

Justification:
- A. Correct: informal reviews are a lightweight approach that will achieve the benefits.
- B. Incorrect: management wants a lightweight process, and because the requirements (and possibly the design) are already complete.
- C. Incorrect: C is not as good an answer as A, because C specifically includes only test work products.
- D. Incorrect: reviews can be planned and managed by various participants on a project, including the test manager.

Point Value: 3

CTAL-ATM _LO-3.3.2

TM 3.3.2 (K2) Understand the factors, skills, and time required for participation in reviews.

Question:

Scenario 1:

Assume that you are working for an ambitious start-up. They are creating a system that will provide customized loyalty and rewards programs for small- and medium-sized companies selling to customers on the Web. These companies enroll themselves on the system's web store. This allows the companies to create customized buttons, to be placed on their websites, that let customers enroll in the companies' loyalty and rewards program. Each subsequent purchase earns points, and both companies and their customers can manage the program; for example, to determine the number of points required to receive a free product or service.

Your employer's marketing staff is heavily promoting the system, offering aggressive discounts on the first year's fees to sign up inaugural companies. The marketing materials state that the service will be highly reliable and extremely fast for companies and their customers.

At this time, the requirements are complete, and development of the software has just begun. The current schedule will allow companies and their customers to start enrolling in three months.

Your employer intends to use cloud computing resources to host this service, and to have no hardware resources other than ordinary office computers for its developers, testers, and other engineers and managers. Industry-standard web-based application software components will be used to build the system.

Assume that you have been asked by the senior management team to manage reviews as part of this project. You are selecting participants for a review of the identified quality risk items.

Consider the following attributes needed to participate effectively in a review:
I. Technical skills
II. Suitable personality traits
III. Procedural knowledge
IV. Business knowledge

Consider the following summary description of an individual who might participate in a review:
1. Past testing of financial applications
2. Development of simple web applications
3. Experienced participant in reviews
4. Detail-oriented
5. Understanding of cloud computing

Which of the following correctly matches the attributes with this individual's details?

Justification:

    A. Correct: Web development and understanding of cloud computing relate to the technical elements of the project. Attention to detail is a personality trait needed in any review participant. Having participated in reviews gives the individual knowledge of the review procedure. Financial applications manage balances, which is relevant to managing loyalty point balances.

    B, C, and **D** are all incorrect because of one or more mismatches.

Point Value: 1

TM-3.4.1 (K3) Define process and product metrics to be used in reviews

Question:
You work for an international company producing hardware and software for telecom networks. Hardware and software development are done in separate business units. You are the test manager of one product line of network router software.

In your product line, there is a long tradition of creating tightly integrated products using an incremental product lifecycle. The hardware business unit produces a new version every six month. Your software product line aims to have a new version of the software ready for each new hardware version. The software is developed in two-month increments.

The business unit schedules are synchronized during design.

Your team consists of 15 testers, who have been in the company for two years, but mostly a lot longer. New tests are developed by the most experienced test analysts as in-house custom test scripts. Variations of tests and the regression test sets are run by the rest of the team.

The company management requires monthly progress reports listing the number of severe defects found and the status of test execution. There have also been efforts to measure the efficiency of personnel in all business units. Your company has also implemented CMMI on company level.

There have been problems to keep up with the hardware development schedule.

Your manager thinks that the project might find some defects more efficiently by having testers review the business requirements. Which three of the following metrics would be used best to prove this point during review trial? Mark exactly THREE options.

Justification:
- **A, C**. and **D.** Correct: because with these you can calculate the total time spent in reviews and dynamic testing and the number of found defects in both, and then compare those numbers to dynamic testing numbers only.
- **B**. Incorrect: It is not relevant to efficiency calculations.
- **E**. Incorrect: As it is specifically mentioned in scenario, you might be drawn to this. Not relevant to count only severe defects though.
- **F**. Incorrect: As it is specifically mentioned in scenario, you might be drawn to this. Not relevant to think about status. You want test hours.
- **G**. Incorrect: This might sound better than D. But even if review results are probably defects, you shouldn't include the hardware reviews, as the question implies that using reviews you want to find software requirement defects that might later end up as defects that dynamic testing can find.

Point Value: 2

CTAL-ATM _LO-3.5.1

TM-3.5.1 (K2) Explain, using examples, the characteristics of a formal review

Question:
You are the test manager working on an agile project developing information apps. Due to missing and incorrect functionality reported by users, formal reviews of all user stories are planned. The reviews are led by you, the test manager. The main objective of the reviews is the agreement of all stakeholders on the user story format, granularity, completeness, and preciseness. The following persons play the role of reviewers: chief developer (CD), test analyst (TA), product manager (PM), and domain expert (DE). During the kickoff-meeting, the CD complains about being pulled off his real duty. After the individual reviews, the following table depicts the number of defects found by each of the three reviewers:

	CD	TA	PM	DE
Major	2	8	6	5
Minor	2	11	5	7
Typo	8	14	9	11

You have to decide how to proceed with the review.

Which ONE of the following options should be chosen by the test manager?

Justification:
- **A.** Correct: Root cause of the defects must be found
- **B.** Incorrect: All stakeholders must agree on the review objectives.
- **C.** Incorrect: "punishment" don't help, be constructive!
- **D.** Incorrect: accuses don't help, be constructive!

Point Value: 1

CTAL-ATM _LO-4.2.1

TM-4.2.1 (K3) Develop a defect management process for a testing organization, including the defect report workflow, that can be used to monitor and control a project's defects throughout the testing lifecycle

Question:

The diagram shows an incomplete defect management process, where three states (states X, Y and Z) have yet to be named appropriately.

Which of the following would correctly complete the process?
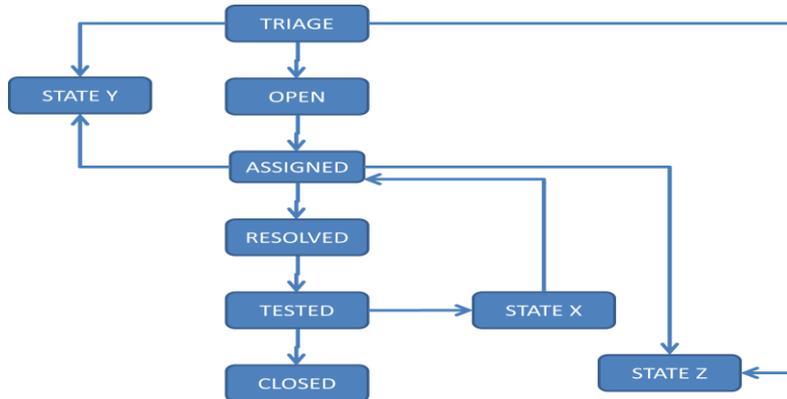
Justification:
- **A.** Correct: Both initial triage and assignment may decide to reject a defect (hence transition to REJECTED). If testing finds defect not fixed then it will move to REOPENED. Both initial triage and assignment may decide that a defect may be deferred (perhaps to a later release).
- **B.** Incorrect: No point retesting immediately after testing. NEW is often synonymous with OPEN. If state Z was blocked, then you cannot exit this state.
- **C.** Incorrect: A duplicate defect would not require re-assignment. Unconfirmed as state Y does not work as you cannot leave this state. State Z could be terminated in some schemes.
- **D.** Incorrect: Verified and tested are often synonymous – so both not needed. Review as state Y does not work as you cannot leave this state. State Z as fixed does not work – fixed is synonymous with resolved and you cannot get from state Z to 'CLOSED'.

Point Value: 2

CTAL-ATM _LO-4.2.2

TM-4.2.2 (K2) Explain the process and participants required for effective defect management.

Question:

Which of the following represents a legal sequence of states for a defect report that leads to a terminal state? Assume that "in progress" means one or more states where developers or other project stakeholders are addressing the defect.

Justification:
- **A.** Correct: it corresponds to a defect that turns out
- **B.** Incorrect: it makes no sense to defer a defect that's already fixed
- **C.** Incorrect: confirmation test is not a terminal state
- **D.** Incorrect: a defect report can't be in progress before it's even reported.

Point Value: 1

CTAL-ATM _LO-4.3.1

TM-4.3.1 (K3) Define the data and classification information that should be gathered during the defect management process.

Question:

You are the test manager on a project where system testing is being performed on software being provided by a third party. You have received a complaint from the third party that the completeness of the defect data from your system testing is unacceptable.

The following list of information items has been identified as potentially missing from the defect reports being sent to the third party.

Which THREE items do you think are MOST important to add to the defect reports?

Justification:
   A. Correct: The third party needs this information to aid their prioritization.
   B. Correct: The test environment information will help them determine the environment where the defect becomes apparent.
   C. Correct: These steps (and actual results) will help them understand the defect and the expected results will confirm that the testers understood what was expected.
   D. Incorrect: The third party already knows that these defect reports are coming from dynamic system testing.
   E. Incorrect: Phase of detection is already available (system test), and phase of removal (hopefully now) is not known.
   F. Incorrect: It is not the testers' responsibility to determine the location of the defect in the system.

Point Value: 2

CTAL-ATM _LO-4.4.1

TM-4.4.1 (K2) Explain how defect report statistics can be used to evaluate the process capability of the testing and software development processes

Question:

It has been decided that the first step to test and development process improvement within your organization will be to reduce the number of defects introduced during development.

Which of the following defect report statistics will be MOST useful in fulfilling this aim?

Justification:
   A. Correct: This will show where defects are currently introduced, and so we can target these activities to prevent future defect introduction.
   B. Incorrect: The phase of introduction may be useful, but the detection and removal info is not useful for reducing defect introduction.
   C. Incorrect: This is used for defect clustering information to target components that need extra testing – but does not directly help prevent defects.
   D. Incorrect: This tells us how efficient we are at removing defects – it does not help with reducing the introduction of defects.

Point Value: 1

CTAL-ATM _LO-5.2.1

TM-5.2.1 (K2) Explain, using examples, why it is important to improve the test process.

Question:
Which TWO of the following statements are the best examples of the importance of improving the test process?

Justification:
- **A.** Correct: syllabus sect. 5.2.
- **B.** Correct: syllabus sect. 5.3.
- **C.** Incorrect: contradicts syllabus.
- **D.** Incorrect: contradicts syllabus.
- **E.** Incorrect: wrong conclusion.

Point Value: 1

CTAL-ATM _LO-5.3.1

TM-5.3.1 (K3) Define a test process improvement plan using the IDEAL model

Question:
Assume that you are a test manager and are working to make your testing processes more effective and efficient. You have already a management-approved initial budget in place for these process improvements. Last week, an external consultant completed her assessment and delivered her findings. Which THREE of the following are the remaining steps for this process improvement effort, assuming you are following the IDEAL model for process improvement?

Justification:
- **A.** Correct: it's the third step of the IDEAL process.
- **B.** Correct: it's the fourth step of the IDEAL process.
- **C.** Correct: it's the fifth step of the IDEAL process.
- **D.** Incorrect: this is the first step of the IDEAL process and has already been carried out.
- **E.** Incorrect: though it certainly happens more often than not.
- **F.** Incorrect: this is the second step of the IDEAL process and has already been carried out.
- **G.** Incorrect: it is not a given that your organization followed TMMi.

Point Value: 3

CTAL-ATM _LO-5.4.1

TM-5.4.1 (K2) Summarize the background, scope and objectives of the TMMi test process improvement model

Question:
You work for an international company producing hardware and software for telecom networks. Hardware and software development are done in separate business units. You are the test manager of one product line of network router software.

In your product line, there is a long tradition of creating tightly integrated products using an incremental product lifecycle. The hardware business unit produces a new version every six month. Your software product line aims to have a new version of the software ready for each new hardware version. The software is developed in two-month increments.

The business unit schedules are synchronized during design.

Your team consists of 15 testers, who have been in the company for two years, but mostly a lot longer. New tests are developed by the most experienced test analysts as in-house custom test scripts. Variations of tests and the regression test sets are run by the rest of the team.

The company management requires monthly progress reports listing the number of severe defects found and the status of test execution. There have also been efforts to measure the efficiency of personnel in all business units. Your company has also implemented CMMI on company level.

There have been problems to keep up with the hardware development schedule.

You consider TMMi to help you improve your project. Which one of the following TMMi aspects will suit best for this purpose?

Justification:
   A. Correct: TMMi supports CMMi, which is your company's choice.
   B. Incorrect: Based on scenario-information it is unlikely you are this high.
   C. Incorrect: Based on scenario-information it is unlikely you are this low.
   D. Incorrect: Is irrelevant detail.

Point Value: 1

CTAL-ATM _LO-5.5.1

TM-5.5.1 (K2) Summarize the background, scope and objectives of the TPI Next® test process improvement model

Question:
Which ONE of the following statements about the test maturity matrix of TPI Next® is true?

Justification:
   A. Correct: [TPI Next® book p. 50]
   B. Incorrect: improvement objectives not visible in matrix
   C. Incorrect
   D. Incorrect

Point Value: 1

CTAL-ATM _LO-5.6.1

TM-5.6.1 (K2) Summarize the background, scope and objectives of the CTP test process improvement model

Question:
Which of the following is an example of achieving an objective for the CTP test process improvement model?

Justification:
   A. Correct: CTP uses metrics to benchmark organizations against industry averages.
   B. Incorrect: this would apply to TMMi.
   C. Incorrect: this would apply to TPI-Next.
   D. Incorrect: the assessment is part of the scope of the CTP model, but it is not an objective (except maybe for the consultant doing it).

Point Value: 1

CTAL-ATM _LO-5.7.1

TM-5.7.1 (K2) Summarize the background, scope and objectives of the STEP test process improvement model

Question:
You work for an international company producing hardware and software for telecom networks. Hardware and software development are done in separate business units. You are the test manager of one product line of network router software.

In your product line, there is a long tradition of creating tightly integrated products using an incremental product lifecycle. The hardware business unit produces a new version every six month. Your software product line aims to have a new version of the software ready for each new hardware version. The software is developed in two-month increments.

The business unit schedules are synchronized during design.

Your team consists of 15 testers, who have been in the company for two years, but mostly a lot longer. New tests are developed by the most experienced test analysts as in-house custom test scripts. Variations of tests and the regression test sets are run by the rest of the team.

The company management requires monthly progress reports listing the number of severe defects found and the status of test execution. There have also been efforts to measure the efficiency of personnel in all business units. Your company has also implemented CMMI on company level.

There have been problems to keep up with the hardware development schedule.

You consider that the STEP-model might suit you well to solve above problems in the longer term. Which one of the following STEP basic premises fits your need best?

Justification:
   A. Correct: fits "test is behind schedule".
   B. Incorrect: B is OK but requirements are not mentioned in the scenario.
   C. Incorrect: Design problems not mentioned in scenario.
   D. Incorrect: is OK but already done, since defects are classified.

Point Value: 1

CTAL-ATM _LO-6.2.1

TM-6.2.1 (K2) Describe management issues when selecting an open-source tool

Question:
You work for an international company producing hardware and software for telecom networks. Hardware and software development are done in separate business units. You are the test manager of one product line of network router software.

In your product line, there is a long tradition of creating tightly integrated products using an incremental product lifecycle. The hardware business unit produces a new version every six month. Your software product line aims to have a new version of the software ready for each new hardware version. The software is developed in two-month increments.

The business unit schedules are synchronized during design.

Your team consists of 15 testers, who have been in the company for two years, but mostly a lot longer. New tests are developed by the most experienced test analysts as in-house custom test scripts. Variations of tests and the regression test sets are run by the rest of the team.

The company management requires monthly progress reports listing the number of severe defects found and the status of test execution. There have also been efforts to measure the efficiency of personnel in all business units. Your company has also implemented CMMI on company level.

There have been problems to keep up with the hardware development schedule

Your company originally has built an in-house test automation tool as they anyway needed to build interfaces to drive test scripts against their system to fulfill all the telecom standard requirements. Maintaining the in-house tool has gradually become very costly.

An open-source tool might free time from you test automation experts. You need to consider several factors before making this decision. Which one of the following statements does NOT apply?

Justification:
   A. Correct: open source tools can be modified, and you have the capabilities, having earlier built custom tools, so you shouldn't care about adapting being hard.
   B. Incorrect: B is a valid concern, as you need to adapt the tools and maybe give rights of your adaptations to open-source community, depending on licensing terms.
   C. Incorrect: C is a valid concern, as you need the telecom standard compliance.
   D. Incorrect: D is a valid concern, as you have your own specific purposes (which is why you originally had custom tools). Is the original purpose too far from what you need?

Point Value: 1

TM-6.2.2 (K2) Describe management issues when deciding on a custom tool

Question:
You work for an international company producing hardware and software for telecom networks. Hardware and software development are done in separate business units. You are the test manager of one product line of network router software.

In your product line, there is a long tradition of creating tightly integrated products using an incremental product lifecycle. The hardware business unit produces a new version every six month. Your software product line aims to have a new version of the software ready for each new hardware version. The software is developed in two-month increments.

The business unit schedules are synchronized during design.

Your team consists of 15 testers, who have been in the company for two years, but mostly a lot longer. New tests are developed by the most experienced test analysts as in-house custom test scripts. Variations of tests and the regression test sets are run by the rest of the team.

The company management requires monthly progress reports listing the number of severe defects found and the status of test execution. There have also been efforts to measure the efficiency of personnel in all business units. Your company has also implemented CMMI on company level.

There have been problems to keep up with the hardware development schedule.

When your company originally decided to build a custom in-house test tool, one reason for this decision was company's unique hardware architecture. Maintenance of the test tool has proven to be time-consuming.

You consider whether your business unit's current custom-built tool is still valid, and you think about other options such as open-source software. Which of the following arguments BEST supports the validity of the custom-built tool choice?

Justification:
  - **A.** Correct: the company's hardware business unit changes hardware often (every six months) .
  - **B.** Incorrect: B would suggest to use a ready-made tool, but standard-compliance could be met with custom-built tools also, although maybe with more effort.
  - **C.** Incorrect: this is a prerequisite, but not a reason.
  - **D.** Incorrect: makes it attractive to keep the custom-made tool, but doesn't justify the great time spent to use and maintain the tool and the stem doesn't mention ease-of-use.

Point Value: 2

TM-6.2.3 (K4) Assess a given situation in order to devise a plan for tool selection, including risks, costs and benefits

Question:
You work for an international company producing hardware and software for telecom networks. Hardware and software development are done in separate business units. You are the test manager of one product line of network router software.

In your product line, there is a long tradition of creating tightly integrated products using an incremental product lifecycle. The hardware business unit produces a new version every six month. Your software product line aims to have a new version of the software ready for each new hardware version. The software is developed in two-month increments.

The business unit schedules are synchronized during design.

Your team consists of 15 testers, who have been in the company for two years, but mostly a lot longer. New tests are developed by the most experienced test analysts as in-house custom test scripts. Variations of tests and the regression test sets are run by the rest of the team.

The company management requires monthly progress reports listing the number of severe defects found and the status of test execution. There have also been efforts to measure the efficiency of personnel in all business units. Your company has also implemented CMMI on company level.

There have been problems to keep up with the hardware development schedule

You have heard that another similar software product line within your company is using an open-source tool for their test automation. They use it to automate roughly 50% of the tests and execute the remaining tests manually through the user interface of the software.

You are requested to report if it is possible to select this tool for your product line as well. What are your key concerns?
Mark exactly THREE options.

Justification:
  A. Correct: you need to think about your existing large number of tests, also a ROI concern.
  B. Correct: you need to consider the possibility the tool is not enough to all your technical needs, even if it would be faster for some of them.
  C. Correct: it comes down to overall ROI and capability to be faster in the project under the tight deadlines.
  D. Incorrect: not your major concern although good point to check in general.
  E. Incorrect: not your major concern although good point to check in general.
  F. Incorrect: not your major concern although good point to check in general.
  G. Incorrect: not your major concern although good point to check in general.

Point Value: 2

CTAL-ATM _LO-6.3.1

TM-6.3.1 (K2) Explain the different phases in the lifecycle of a tool

Question:
You work for an international company producing hardware and software for telecom networks. Hardware and software development are done in separate business units. You are the test manager of one product line of network router software.

In your product line, there is a long tradition of creating tightly integrated products using an incremental product lifecycle. The hardware business unit produces a new version every six month. Your software product line aims to have a new version of the software ready for each new hardware version. The software is developed in two-month increments.

The business unit schedules are synchronized during design.

Your team consists of 15 testers, who have been in the company for two years, but mostly a lot longer. New tests are developed by the most experienced test analysts as in-house custom test scripts. Variations of tests and the regression test sets are run by the rest of the team.

The company management requires monthly progress reports listing the number of severe defects found and the status of test execution. There have also been efforts to measure the efficiency of personnel in all business units. Your company has also implemented CMMI on company level.

There have been problems to keep up with the hardware development schedule

You have heard that another similar software product line within your company is using an open-source tool for their test automation. They use it to automate roughly 50% of the tests and execute the remaining tests manually through the user interface of the software.

If you choose the same open-source tool, which of the following activities shall happen first before retiring the current custom-built tool in order to have value as quickly as possible?

Justification:

    A. Correct: A is the correct answer concerning retirement, as there are lots of existing scripts, and regression test scripts are the ones used most often.
    B. Incorrect this activity is not necessary because the old tool will be retired.
    C. Incorrect: this activity is not necessary because the old tool will be retired.
    D. Incorrect: Even if you would like, it is not realistic to convert all the scripts, if you can manage with just regression test scripts.

Point Value: 1

CTAL-ATM _LO-6.4.1

TM-6.4.1 (K2) Describe how metric collection and evaluation can be improved by using tools

Question:
You work for an international company producing hardware and software for telecom networks. Hardware and software development are done in separate business units. You are the test manager of one product line of network router software.

In your product line, there is a long tradition of creating tightly integrated products using an incremental product lifecycle. The hardware business unit produces a new version every six month. Your software product line aims to have a new version of the software ready for each new hardware version. The software is developed in two-month increments.

The business unit schedules are synchronized during design.

Your team consists of 15 testers, who have been in the company for two years, but mostly a lot longer. New tests are developed by the most experienced test analysts as in-house custom test scripts. Variations of tests and the regression test sets are run by the rest of the team.

The company management requires monthly progress reports listing the number of severe defects found and the status of test execution. There have also been efforts to measure the efficiency of personnel in all business units. Your company has also implemented CMMI on company level.

There have been problems to keep up with the hardware development schedule.

The problems to keep up with the release schedule have been analyzed further. Preliminarily it seems that there is no time to cover enough of new requirements of a new release.

You consider how to measure the coverage of your functional test scripts to help you achieve the release deadlines. Which one of the following options is the BEST choice?

Justification:
    A. Correct: this metric will tell you automatically if you cover enough of the requirements to make it to the release deadline and if you have too much coverage on some areas.
    B. Incorrect: on its own doesn't tell anything, the tests could be all on same functional area. However, the measuring of test execution becomes easier with this.
    C. Incorrect: concerns performance testing tools.
    D. Incorrect: this might help make collecting hours easier, but on its own doesn't help, time is mentioned as problem, so that might lead you to this option.

Point Value: 1

CTAL-ATM _LO-7.2.1

TM-7.2.1 (K4) Using a skills assessment spreadsheet, analyze the strengths and weaknesses of team members related to use of software systems, domain and business knowledge, areas of systems development, software testing and interpersonal skills

Question:
The following table shows the skills matrix for a user acceptance test (UAT) team in the areas of software development and domain knowledge (publishing). Each team member was assessed based on their capability in the different areas of publishing domain knowledge, use cases, software design and coding. For each of the software development areas they were rated at one of <u>four</u> levels (no knowledge, awareness, able to understand, and able to create), while their knowledge of the betting domain was rated as high, medium or low.

	Team Member				
	V	**W**	**X**	**Y**	**Z**
Publishing	high	low	medium	high	low
Use Cases	none	aware	aware	understand	understand
Software Design	none	aware	create	aware	understand
Coding	none	create	understand	understand	aware

It has been decided that the UAT team shall start employing an open source test tool that uses a Java-like test scripting language and keyword-driven testing. Based on the skills matrix, which two testers would you advise are employed to work on the development of the test framework for this tool?

Justification:
- **A.** Correct: Coding skills are necessary for the actual scripting and design skills are very useful to ensure good design of the keyword-driven framework.
- **B.** Incorrect: Neither of these can write code, which is necessary to write the scripts.
- **C.** Incorrect: Neither of these can write code, which is necessary to write the scripts.
- **D.** Incorrect: Neither of these can write code, which is necessary to write the scripts.

Point Value: 2

CTAL-ATM _LO-7.2.2

TM-7.2.2 (K4) Analyze a given skills assessment for a team in order to define a training and skills development plan.

Question:
Assume that you are managing a test team of six people, that you have identified critical skills in three categories for a team: testing, technology, and business knowledge. You have performed a skills assessment for each test team member against each critical skill, using a 1 to 5 scale, with 1 representing the lowest level of skill and 5 representing the highest level of skill. Assume that you have the following average scores for your team in each category:

Testing 3.25
Technology 1.17
Business knowledge 3.75

You are now planning actions to take in order to develop your team. Which THREE of the following actions should be in your plan?

Justification:
- **A.** Correct: we need to most urgently address the weaknesses that most affect effectiveness and efficiency.
- **B.** Correct: we should look for ways to balance weaknesses with strengths when hiring.
- **C.** Correct: in addition to testing, technology, and business knowledge, soft skills are also important for success.
- **D.** Incorrect: for all we know, some or all of the testers are already certified, and, in addition, we don't have any indication that the most critical skills weaknesses are in the area of testing.
- **E.** Incorrect: this is an extreme step, and we have no information that say the team is failing or seen to be failing.
- **F.** Incorrect: creating weakness where you currently have strength is not a very desirable solution.
- **G.** Incorrect: it is effectively abdicating management responsibility and the need to guide skills growth, and making solving the skills weaknesses the individuals' problem.

Point Value: 3

CTAL-ATM _LO-7.3.1

TM-7.3.1 (K2) For a given situation, discuss the necessary hard and soft skills required to lead a testing team

Question:
You are leading a four-person testing team on a project with a delivery date that is only four weeks away, and your original test plan showed that the remaining testing would take 200 days of effort. Two new team members are due to start next week.

Which THREE of the following statements BEST describe skills you will be required to demonstrate for the next few weeks?

Justification:
  A. Correct: It can be seen from the figures that following the original plan will not meet the schedule, and that this expectation needs to be managed.
  B. Correct: If team members feel they are valued they are more likely to contribute more.
  C. Correct: As we are getting two new team members, and timescales are short, we need to assimilate them into the team as quickly as possible.
  D. Incorrect: Treating all team members the same and sharing all tasks across the team does not make best use of the disparate skills of the different team members.
  E. Incorrect: As the team leader, you have different responsibilities (and presumably skills) than the team members, so it is better use of your time to manage and them to test.
  F. Incorrect: It is better practice to provide more autonomy to the testers and allow them to manage their time more efficiently.
  G. Incorrect: Although analyzing personality traits to identify new skills to be acquired is good practice, it is not the most useful skill to be applied over the next four weeks.

Point Value: 1

CTAL-ATM _LO-7.4.1

TM-7.4.1 (K2) Explain options for independent testing

Question:
An organization develops home-banking software for the local market, using an agile software development process. The software depends on external software components from the open source domain. It also uses existing web services, which are replaced by test stubs during development and integration. There are plans to internationalize the home-banking software for a globally operating bank.

Which ONE of the following is the BEST proposal to fit testing into the project?

Justification:
  A. Correct: technical aspects covered by developers; functionality covered by internal testers and domain experts; internationalization covered by external experts.
  B. Incorrect: System testing done solely by banking experts: who tests web services?
  C. Incorrect: No component integration testing; no internationalization test knowledge.
  D. Incorrect: no internationalization test knowledge.

Point Value: 1

CTAL-ATM _LO-7.5.1

TM-7.5.1 (K2) Provide examples of motivating and demotivating factors for testers

Question:
You have been recently appointed as the Test Manager working on a large web-based project that currently is not meeting customer expectations. You have become aware that the testers are unhappy and that the retention rate is low, with testers leaving for other jobs on a regular basis.

Which ONE of the following situations is MOST likely to be demotivating the testers?

Justification:
    A. Correct: Aligning tester bonuses with delivered quality can be demotivating as the testers have an indirect impact on delivered quality – and in this scenario the deliverable is not meeting customer expectations, so is probably perceived to be of low quality.
    B. Incorrect: This is motivating behavior– from syllabus.
    C. Incorrect: This is motivating behavior– from syllabus.
    D. Incorrect: This is motivating behavior– from syllabus.

Point Value: 1

CTAL-ATM _LO-7.6.1

TM-7.6.1 (K2) Explain the factors that influence the effectiveness of communication within a test team, and between a test team and its stakeholders

Question:
You are the test manager of an organization developing software for an automatic teller machine (ATM). Usability testing is done on-site by the internal test team. At the beginning of the project, upper management decided to outsource functional system testing from the internal test team to an off-shore site. During usability testing, several defects in functionality were found by the internal test team, some of which blocked the continuation of the usability tests. Analysis of the test reports shows that functional tests of the relevant functions were designed and executed by the off-shore team without finding any of the blocking defects.

Which ONE of the following is the BEST communication proposal for discussing the steps/activities needed to mitigate the situation?

Justification:
    A. Correct: Diplomacy and objectivity are important to build trust in the new outsourcing setting; reviews are constructive means to transfer knowledge of the internal team to the off-shore team.
    B. Incorrect: Upper management won't want to see detailed defect reports.
    C. Incorrect: Upper management won't want to be involved in the root cause investigation.
    D. Incorrect: Off-shore team alone won't be effective to find the root causes

Point Value: 1