

# Sample Exam – Questions

Sample Exam set A  
Version 1.3.3

## ISTQB® Test Management Syllabus Advanced Level

Compatible with Syllabus version 3.0

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International Software Testing Qualifications Board

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## Document Responsibility

The ISTQB® Examination Working Group is responsible for this document.

This document is maintained by a core team from ISTQB® consisting of the Syllabus Working Group and Exam Working Group.

## Acknowledgements

This document was produced by a core team from ISTQB®: Horst Pohlmann (Product Owner, Vice Chair AELWG), Tauhida Parveen, Francis Fenner, Laura Albert, Matthias Hamburg, Maud Schlich, Tanja Tremmel, Ralf Bongard, Erik van Veenendaal, Jan Giessen, Bernd Freimut, Andreas Neumeister, Georg Sehl, Rabi Arabi, Therese Kuhfuß, Ecaterina Irina Manole, Veronica Belcher, Kenji Onishi, Pushparajan Balasubramanian, Meile Postuma and Miroslav Renda.

Following reviewers participated in the BETA review: Lucjan Stapp (PTB), Carsten Weise (imbus Akademie), Arda Ender Torçuk (BNTQB), Jürgen Beniermann (GTB), Ingvar Nordström, SSTB, Márton Siska (HTB), Klaus Skafte (DSTB), Seunghee Choi (KSTQB), Swapnil shah (ITB), Sterbinszky Ádám (HTB), Nicola de Rosa (ITA-STQB), Ashish A Kulkarni (ITB), Szilárd Széll (HTB), Damian Brzęczek (PTB), Ding Guofu (CSTQB), Ágnes Srancsik (HTB), Armin Born (STB), Márton Siska (HTB) and Jean-Baptiste Crouigneau (EWG-Rep in TF-TM).

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## Introduction

### Purpose of this document

The example questions and answers and associated justifications in this sample exam 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
- Providing training providers and exam candidates with examples of exam questions

These questions cannot be used as-is in any official examination.

**Note** that real exams may include a wide variety of questions, and this sample exam **is not** intended to include examples of all possible question types, styles or lengths. This sample exam may both be more difficult or less difficult than any official exam.

### Instructions

In this document you may find:

- Questions<sup>1</sup>, including for each question:
  - Any scenario needed by the question stem
  - Point value
  - Response (answer) option set
- Additional questions, including for each question [does not apply to all sample exams]:
  - Any scenario needed by the question stem
  - Point value
  - Response (answer) option set
- *Answers, including justifications, are contained in a separate document.*

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<sup>1</sup> In this sample exam the questions are sorted by their targeted LO; this will not be the case in a live exam.

## Questions

### Section: Test Process

#### Question #1 (1 Point)

You are test manager in a large CRM implementation project. You are required to establish a test plan before the development starts.

Which of the following activities is MOST ESSENTIAL in developing and establishing the test plan?

- a) Reaching consensus among all stakeholders
- b) Defining test objectives based on regulatory standards
- c) Establishing readiness to begin testing
- d) Having all stakeholders identify their risk mitigation strategy

Select ONE option.

#### Question #2 (1 Point)

Which of the following MOST accurately defines the goal of test monitoring?

- a) Test monitoring compares the actual test progress against the planned progress.
- b) Test monitoring compares the actual results against the expected results.
- c) Test monitoring assesses with newly identified or known risks after they have changed.
- d) Test monitoring implements the test plan and swiftly initiates corrective actions.

Select ONE option.

## Section: Context of Testing

### Question #3 (1 Point)

When comparing stakeholders in a given project, the Project Manager wants to ensure that detailed discussions are held with similar-level stakeholders (e.g. peers to Project Manager) while, at the same time, engaging operative stakeholders in a planning workshop specifically for the project schedule.

Which group of stakeholders is the BEST choice for the Project Manager to include in the detailed discussions?

- a) Development leads, automation testers, finance staff
- b) Security architects, operations team
- c) Department staff, Product Managers
- d) Project Managers for other projects, trainers, test management tool vendor

Select ONE option.

### Question #4 (1 Point)

Which statement BEST describes why knowledge about stakeholders in a stakeholder matrix is relevant for test management?

- a) It helps to involve stakeholders with high influence and interest at an early stage and to manage their expectations in a targeted manner.
- b) It serves to identify the most important stakeholders and make their perspectives the basis for key decisions.
- c) It sets out binding and general guidelines on which stakeholders have the highest priority in all projects.
- d) It replaces risk management and risk mitigation, as all stakeholders can contribute their views on the risks.

Select ONE option.

### Question #5 (1 Point)

A company is transitioning from a sequential development process to a hybrid software development model that combines agile sprints with phase-based release cycles. The test team is having difficulty adjusting to the shorter iterations and continuous testing cycles.

Which of the following test management activities is MOST IMPORTANT in this situation?

- a) Coaching and mentoring the test team on continuous integration (CI) and agile testing practices to support the transition to agile approaches.
- b) Extend release cycles to maintain the usual testing process and ensure coverage.
- c) Protecting test team members from stakeholders in order to shield the team from external distractions during the critical transition phase.
- d) Shift the focus away from pure testing and onto the development goals of the project, as in an agile approach, all members are responsible for quality.

Select ONE option.

### Question #6 (1 Point)

A new test manager joins an organization and is initially tasked with identifying which software development life cycle is currently being used. Four things that she observed were:

- Test iterations occurred every 3 weeks.
- Automation was implemented to aid in meeting time frames.
- Products and tasks were completed before moving to the next iteration.
- Testing wasn't starting until the requirements had been completed.

Which software development life cycle is currently being used?

- a) Sequential
- b) Iterative
- c) Hybrid
- d) DevOps

Select ONE option.

### Question #7 (3 Points)

You are joining a long-running project as a test manager, which releases new features and bug fixes for a web shop on a daily basis.

Since your predecessor has already left the company, you are working out which combination of test management activities is BEST suited to the project in the short term in order to continue to ensure stakeholder satisfaction and the success of the project in a stable and continuous manner.

Which two test management activities do you choose?

- a) Test planning should include a retrospective after the rollout to identify potential weaknesses and problems so that long-term strategies can be developed to reduce risks.
- b) The efficiency of the testing process is an important factor in test planning. Therefore, especially in the context of short iteration cycles, test automation for regression testing should be expanded so that the time frame can be adhered to.
- c) Test monitoring must continuously record the progress of test execution and the status of error conditions so that test control can align the test sequence appropriately with the risks and prioritized requirements.
- d) Quality gate management is very important for test control, so it is necessary to clarify at short notice what a quality gate is in the software life cycle, who makes the decisions about it, and what consequences it has for testing.
- e) Preparing team communication is an important part of test planning. Especially when teams are working in different locations, the coordination infrastructure must be adapted accordingly.

Select TWO options.

### Question #8 (3 Points)

Assume you are in a project that develops safety-critical software for a medical device. The software must comply with standards like the IEC 62304 standard and FDA regulations. The project is following an Agile methodology with two-week sprints. The test team consists of four onsite testers and six offsite testers.

The organization uses a cloud-based DevOps toolchain as the main tool for CI/CD and test automation. The project is in the maintenance phase and starting now will require frequent regression testing due to defect fixes and feature enhancements. The project has a continuous risk management process in place, which involves identifying, assessing, and mitigating any new or existing risks associated with the software changes.

Which of the following test management activities BEST emphasizes the specific focus of this project?

- a) Developing a separate risk management plan to identify, assess, prioritize, and reduce risks.
- b) Developing a communication and coordination concept for cooperation between onsite and offsite testers.
- c) Developing a test automation plan to define the scope of automation, tool/framework selection, and metrics.
- d) Developing a regression test plan with scope definition, risk-based prioritization, traceability (changes and test cases), and exit criteria.

Select ONE option.

## Section: Risk-based testing

### Question 9 (1 Point)

A project involved the migration of a web application to the cloud. The cloud system provider estimated that a system outage was very unlikely. Based on this statement, the test manager decided not to conduct reliability testing for this item because even though the risk impact would be high, the moderate overall risk level did not justify the additional effort and time needed for this test type. Soon after going live, the website became unavailable for two days causing a substantial loss of revenue and reputation to the company.

How could the test team improve its use of risk-based testing to avoid such problems in the future?

- a) Involve additional stakeholders in risk analysis to improve the assessment of risk likelihood
- b) Conduct intensive reliability tests even if the risk level is moderate
- c) Involve experienced testers in risk assessment to evaluate the risk level correctly
- d) Use a risk-based testing strategy to avoid such major failures

Select ONE option.

### Question 10 (1 Point)

As a test manager, you create a spreadsheet with rows for the system components and columns for their failure modes, their risk likelihood and risk impact. You invite the system architects and business representatives to jointly fill in the system components and failure modes based on their expertise.

Which risk identification technique are you applying with this procedure?

- a) Expert interviews
- b) Checklists
- c) Risk workshop
- d) Brainstorming

Select ONE option.

### Question 11 (3 Points)

Risks have been identified for a project and analyzed using a quantitative method, with the following results for risk likelihood and risk impact.

| Risk ID | Description                                                             | Risk Likelihood | Risk Impact |
|---------|-------------------------------------------------------------------------|-----------------|-------------|
| A       | The application may not suit the functionality expected by the business | 40%             | 1,500,000 € |
| B       | The test environment may not be available in time for testing           | 20%             | 500,000 €   |
| C       | Users may not understand system documentation                           | 90%             | 100,000 €   |
| D       | The test manager may not have enough time for this project              | 10%             | 6,000,000 € |

Which set of testing activities would be the best to mitigate these risks?

- a) Address risk A as a high priority by testing an early prototype with business stakeholders, then address risk C by introducing reviews. No testing is planned to mitigate risks B and D.
- b) Execute tests addressing risk A by documentation review, and risk C with black-box testing. Then, address risks B and D with white-box testing.
- c) Mitigate risks by testing risk B and C first with exploratory testing, then test risk A with confirmation testing. Test Risk D as time allows.
- d) Mitigate risks by testing risk A and risk B by testing with business stakeholders using an early prototype and risk D with non-functional testing. Accept risk C without explicit testing.

Select ONE option.

### Question 12 (3 Points)

Assume you are in a project that develops a web application for online banking. The project is following an Agile SDLC and has sprints of two weeks each. The application has several features, such as account management, fund transfer, bill payment, and loan application. Each feature has different levels of security, usability, and performance risks.

You have a test team of six members with different skills and experience.

Based on this scenario, how would you select appropriate test activities to mitigate risks according to their risk level?

- a) Use static testing and dynamic testing for all features but allocate more test effort and use more thorough test techniques for the features with higher risk levels. Assign the most qualified testers to the features with the highest risk levels. Use reviews and regression testing to ensure quality assurance.
- b) Use static testing for the features with lower risk levels and dynamic testing for the features with higher risk levels. Assign the testers randomly to the features regardless of their skills and experience. Use reviews and regression testing to ensure quality assurance.
- c) Use dynamic testing only for the features with higher risk levels and skip testing for the features with lower risk levels. Assign the testers based on their availability and preference. Use reviews and regression testing to ensure quality assurance.
- d) Use static testing only for the features with higher risk levels and skip testing for the features with lower risk levels. Assign the testers based on their seniority and rank. Use reviews and regression testing to ensure quality assurance.

Select ONE option.

### Question 13 (1 Point)

Your team is developing a new major version of a mobile application which graphically displays the timetable of various public transport organizations on a common user interface. Your team is following an Agile SDLC with fast iterations and releases. Requirements are rather informal, often collected from user feedback and development. The organizational test strategy requires risk-based testing. To make the risk analysis proceed quickly, you want to involve the members of the Agile team who are familiar with the main risk areas of usability, compatibility, portability, and performance.

Which technique would you recommend using in this situation?

- a) Hazard analysis
- b) Pragmatic Risk Analysis and Management
- c) Systematic Software Testing
- d) Fault tree analysis

Select ONE option.

## Section: Project Test Strategy

### Question 14 (1 Point)

As a test manager you have been asked by the project manager to establish the test strategy for a software implementation project.

Which of the following are the most important factors for you to consider ensuring an efficient and effective test strategy?

- a) Test types, test techniques and test metrics.
- b) Test levels, entry/exit criteria and test techniques.
- c) Test levels, test types and test techniques.
- d) Test levels, test techniques, and test deliverables.

Select one option.

### Question 15 (3 Points)

Assume you are a member of a project that develops a software product for the banking sector. You are responsible for analyzing the organizational test strategy and the project context to choose the appropriate test approach. You consider the following factors:

- The project has a tight budget and a fixed deadline, which means that you must optimize the test effort and avoid unnecessary costs and delays.
- The customer has provided detailed requirements and expects high quality and reliability from the product, which means that you must ensure that the product meets the customer's expectations and complies with the specifications.
- The project uses an Agile SDLC model with frequent releases and feedback cycles, which means that you must adapt to changing requirements and deliver test results in short iterations.
- The test team consists of four testers with different levels of experience and skills, which means that you must assign the test tasks according to the testers' capabilities and provide guidance and support when needed.
- The test infrastructure is limited and requires manual configuration and maintenance, which means that you must plan and manage the test environment and resources carefully and efficiently.
- The product has several interfaces with other systems that need to be tested, which means that you must coordinate and integrate the test activities with the other stakeholders and ensure the compatibility and interoperability of the products.

Which of the following test approaches would be most appropriate for this project?

- a) Risk-based testing to prioritize the most critical and complex features and scenarios, and to allocate the test resources accordingly.
- b) Model-based testing to generate test cases and test data automatically from the requirements, and to measure the test coverage and quality.
- c) Experience-based testing to leverage the testers' expertise and intuition, and to perform exploratory testing in an Agile context.
- d) Testing based on the acceptance criteria to verify the compliance of the product with the customer's specifications, and to enable acceptance testing.

Select one option.

### Question 16 (3 Points)

Assume you are in a project that develops a web application for online banking. The project is customer specific and has strict requirements on security, performance, and reliability. The project uses an Agile SDLC model with two-week sprints and frequent releases.

The test team consists of four testers with different levels of experience and skills. The test infrastructure is cloud-based and supports various browsers and devices. The test data is provided by the customer and needs to be anonymized before use.

Based only on the scenario, which of the following test approaches would be most appropriate for your project?

- a) Testing will be done by the whole team using three test levels: unit testing and integration testing, where test cases are jointly created and performed by the developers and the testers grouped in pairs, and system testing where the test cases will be created and performed by the four testers. In unit and integration testing level, white-box testing is used aiming at 100% automation. In all test levels risk-based testing will be used to create and prioritize test cases. For system testing the testers will use all appropriate test techniques to cover acceptance criteria.
- b) Testing will be done by the whole team using four test levels: unit testing, integration testing, system testing and acceptance testing. In unit and integration testing as well as in system testing level, model-based testing will be used thoroughly with a focus on state transition testing. Code coverage is measured while executing the tests and aimed at 90% branch coverage. For acceptance testing the sprint demo is therefore sufficient.
- c) As the project uses an Agile SDLC model, no explicit test levels are defined, and testing will be performed by the developers automating their unit tests and by the four testers using exploratory testing. For this, several test charters will be created that give guidance on using the test infrastructure so that all available browsers and devices are covered. Additionally, usability testing will be performed using checklist-based testing.
- d) Two test levels will be defined. The first test level is a combined unit/integration test level where the four testers will create test cases based on the functional requirements using equivalence partitioning, boundary value analysis, decision tables and state transition testing. These test cases will then be automated by the developers and used in unit/integration testing. In system testing the testers will use exploratory testing for every item which is set to “done” by the developers.

Select ONE option.

### Question 17 (2 Points)

You are part of a team responsible for testing a complex e-commerce website. The team has been given the following objective from Management: "The system should be defect-free". According to the S.M.A.R.T criteria, and taking into account the complexity and limited resources of your project, which of the following modifications to this test objective/exit criterion would be most appropriate?

- a) Our website should be able to perform all planned functions without serious defects that affect the user experience.
- b) By the end of the current development phase, less than 1% of the site's functions should have defects, as measured by the total number of functional test cases included in the test suite.
- c) We aim to ensure that our e-commerce system does not experience any critical outages that could lead to business interruptions within the next year.
- d) At UAT exit for Release R, there are 0 (zero) open Critical defects and no more than 3 (three) open Major defects, and all tests for the defined top-priority customer journeys have passed.

### Question 18 (2 Points)

You are the test manager of a project that develops a mobile app for online shopping.

The project is under development and there are high expectations on usability, functionality, and compatibility. The project uses a hybrid SDLC model with four-month releases and monthly iterations. The test team consists of six testers with various skills and experience.

The test infrastructure is cloud-based and supports various devices and operating systems.

The test data is generated by a test data management tool and needs to be validated before use.

Which of the following project test objectives is S.M.A.R.T. according to the syllabus text?

- a) Checking the usability of the app by measuring the time it takes to complete a purchase with the objective that 90% of users can complete their purchase within 3 minutes within the next two months.
- b) Enhancing the level of automated tests by 50% within the next two weeks with the objective of significantly accelerating regression testing and finding more defects to improve user acceptance.
- c) Complying with the rules and regulations of the e-commerce industry which have recently been published and will soon become the regulatory standard in an EU regulation, and thus binding for all stakeholders.
- d) Proving the functionality and compatibility of the app by testing all features on most real devices as well as with emulators provided by an external service provider, within the next two sprints, as there have been negative comments in the stores.

Select ONE option.

## Section: Improving the Testing Process

### Question 19 (1 Point)

Assume that you are a test manager and are working to make your test processes more effective and efficient. You already have a management-approved initial budget in place for these process improvements. Last week, an external consultant completed her assessment on the test process and delivered her findings.

Which of the following is the next step for this process improvement effort, assuming you are following the IDEAL model for process improvement?

- a) Create a plan for selecting and implementing the assessment recommendations.
- b) Implement the assessment recommendations, including any necessary training and piloting.
- c) Initiate the improvement process across the test organization.
- d) Diagnose the current situation by evaluating the sources of inefficiency.

Select ONE option.

### Question 20 (1 Point)

You, as a test consultant, are now responsible for test improvements in a critical project at a small regional bank. The project deals with digital transformation and will continue for two more years using an Agile approach. Since the Test Maturity Model integration (TMMi) is popular in the finance domain, the bank has asked you to use TMMi during your project test improvement activities.

How would you go about using TMMi in the described context?

- a) Make clear that model-based improvement using TMMi is not possible on a project level.
- b) Recommend that all TMMi level 2 and level 3 process areas be used for these improvement activities.
- c) Focus on the TMMi process areas that especially relate to the activities at the project level, and in addition use the specific “TMMi and Agile” guideline.
- d) Since the project is using an Agile approach, propose using the scrum guide for test improvement activities.

Select ONE option.

## Question 21 (2 Points)

Assume that you are working for an ambitious start-up that is developing a system which provides customized loyalty and rewards programs for small and medium-sized companies selling to web-based customers. The companies using the system are able to self-enroll on the system's web store and can then create customized buttons for their websites. These buttons can then be used to allow their 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 by 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.

Four months ago, the requirements had been completed and the development of the software was started. When analyzing the quality risks, the adaptation of the buttons was classified as the lowest risk, while registration was classified as the highest risk. As planned in the schedule, the first release was launched a month ago and companies and their customers could start registering.

The system has now been in use by companies and their customers for a month. Your team has used a mix of risk-based testing, requirements-based testing, and reactive testing. You are now conducting a retrospective for the testing work.

Which TWO of the following areas should most likely be considered in this retrospective?

- a) Evaluating whether significant problems have been reported by users in button customization.
- b) Deciding if the project plan included all relevant project risks that affected delivery to early-adopter companies.
- c) Determining the level of detail required for enrollment, customization and managing the test cases.
- d) Measuring the coverage of the enrollment requirements and reporting the results to project and business stakeholders.
- e) Investigating which tests at which test level could have covered issues reported by customers.

Select TWO options.

## Question 22 (2 Points)

You are a tester in an Agile software development team that has just completed an iteration. You are preparing for the retrospective meeting with the rest of the team.

Which of the following activities is **NOT** part of a typical retrospective?

- a) Reviewing the test progress, defect detection, and test effectiveness metrics
- b) Identifying the root causes of the testing problems and generating improvement ideas
- c) Assigning responsibilities and defining goals and metrics for the improvement actions
- d) Evaluating the test processes and tools against the industry best practices

Select ONE option.

## Section: Test Tools

### Question 23 (1 Point)

You are a test manager and the head of the testing team for a new product line with multiple variants for several customers. One of the first tasks you are assigned is to select and introduce a proper tool for test management, as the current tool by your company does not fit the needs of the upcoming product line.

Which is **NOT** a best practice for the selection of the new test management tool?

- a) Choose the successor of the currently used test management tool without further evaluation
- b) List the criteria needed for the product line that are not met by the test management tool
- c) Evaluate which licensing model will best fit the test management of a product line with multiple variants
- d) Evaluate the tool against clear requirements and objective criteria

Select ONE option.

### Question 24 (3 Points)

You work for an international company producing hardware and software for telecom networks. Hardware and software development are carried out 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 months. 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 at least two years, but mostly a lot longer. New tests are developed by the most experienced test analysts. Variations of tests and the regression test sets are run by the rest of the team.

The company's management requires monthly progress reports listing the number of severe defects found, as well as the status of test execution. There have also been efforts to measure the efficiency of personnel in all business units. There have been problems keeping 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 investigate if it would be possible to use this tool for your product line as well.

What should be your key concern?

- a) How good is the support for the open-source tool?
- b) How is the usability of the new tool?
- c) Is the applied test process mature enough for test automation using this tool?
- d) Can all artifacts created by the tool be easily maintained?

Select one option.

### Question 25 (3 Points)

You are working on a software development project that is using an Agile development methodology.

You are considering introducing a test automation tool to improve the quality and efficiency of testing. You have identified three potential tools: Tool A, Tool B, and Tool C. Each tool has different features, costs, and benefits. The annual recurring costs for all three tools are equal to 20% of the acquisition costs. Before the implementation of the tool the annual manual testing effort was \$ 60,000. You have performed a cost-benefit analysis and calculated the ROI for each tool based on the following information:

- Tool A costs \$10,000 to purchase and \$2,000 per year to maintain. It has a high level of usability and maintainability, but it only supports functional testing. It can reduce the manual testing effort by 20% and the test cycle time by 10%. It can also increase the test coverage by 15%.
- Tool B costs \$15,000 to purchase and \$3,000 per year to maintain. It has a moderate level of usability and maintainability, but it supports both functional and performance testing. It can reduce the manual testing effort by 30% and the test cycle time by 20%. It can also increase the test coverage by 25%.
- Tool C costs \$20,000 to purchase and \$4,000 per year to maintain. It has a low level of usability and maintainability, but it supports functional, performance, and security testing. It can reduce the manual testing effort by 40% and the test cycle time by 30%. It can also increase the test coverage by 35%.

Assuming that the ROI can be calculated for the given situation, which tool would you choose and why?

- a) Tool A, because it has the lowest initial costs
- b) Tool B, because it has the best balance between costs and benefits
- c) Tool C, because it has the highest reduction in effort and time and the highest increase in coverage
- d) None of the tools, because they do not provide more benefits.

Select ONE option.

### Question 26 (1 Point)

For your current project, the available custom-built tool does not meet the requirements of your test automation effort. Within your company, there is an open-source test automation tool successfully being used for identical requirements.

If you choose the same open-source tool, which of the following activities should happen as a first step when retiring the current custom-built tool in order to show the value of the new tool as quickly as possible?

- a) The custom-built tool must be maintained and converted to the new environment.
- b) The regression test scripts of the custom-built tool must be converted to the new tool.
- c) The backup and restore functionalities of the custom-built tool must be maintained.
- d) All test scripts of the custom-built tool must be converted to the new tool.

Select ONE option.

## Section: Test Metrics

### Question 27 (1 Point)

As a test manager, you are required to report on different metrics during various test activities.

Which of the following mappings of metrics to test activities is most appropriate?

Metrics:

1. Product risk coverage
2. Total number of resolved defects vs. total number of found defects
3. Percentage of actual automated vs. planned automated test cases
4. Ratio of actual vs. planned effort (hours) for test activities

Test activities:

- A) Test planning
- B) Test monitoring and test control
- C) Test completion
- D) Test execution

Please match the test activities and corresponding metrics.

- a) 1B, 2B, 3C, 4A.
- b) 1A, 2B, 3C, 4D.
- c) 1B, 2B, 3C, 4B.
- d) 1C, 2D, 3A, 4B.

Select ONE option.

### Question 28 (1 Point)

Your management board is new to test metrics and asks you to explain the primary goal of using test metrics to them. Which of the following statements would you use to explain the benefit of test metrics to your management?

- a) Test metrics are indicators for test progress and assist to assess whether the test exit criteria or test objectives have been met.
- b) Test metrics are recommending corrective actions to achieve effective and efficient testing.
- c) Test metrics are used to collect data from completed test activities to consolidate lessons learned, testware and other relevant information.
- d) Test metrics are used to reprioritize tests when an identified risk becomes an issue.

Select ONE option.

## Question 29 (3 Points)

You work for an international company that manufactures hardware and software for telecommunications networks. You are the test manager for a product line of network router software.

The hardware development team delivers a new release every six months. The software is developed in two-month increments synchronized with the hardware development.

The last overall release was delayed because critical interface errors in the software were found and fixed too late.

The development management asks you to avoid further delays for upcoming releases or at least communicate them early on.

You then plan to implement an improved, metrics-based reporting system based on prioritized user stories (P1, P2, P3) and a tiered product risk list (high, medium, low) for the test area.

Which of the metrics listed are MOST IMPORTANT for your reporting in terms of the requirements of the development management?

- a) Defect metrics: Evaluation of defect priority and source of the defect to report which user stories are faulty and need to be tested more thoroughly.
- b) Test status/coverage metrics per user story, sorted by story priority (P1 to P3), to show which important user stories will be the focus in the coming cycles or are not yet sufficiently covered.
- c) Effort/capacity metrics to forecast whether the planned remaining effort and available velocity are sufficient to test P1/P2 stories and high product risks in a timely manner.
- d) Product risk metrics (retrospective): Evaluation of defects classified as high/critical at interfaces with high product risk in order to identify incorrectly defined interfaces.
- e) Product risk coverage metrics: passed vs. open test cases in relation to risk level (high, medium, low) to report which high-risk areas need to be prioritized in test management.

Select TWO options.

### Question 30 (3 Points)

You are the test manager of a software project that uses a document-centric sequential development model and involves developing a desktop application for a banking system.

The project has a large and hierarchical team that works with multiple stakeholders.

The project has a low level of uncertainty and complexity due to the stable and well-defined requirements and technology. The project also has strict quality and security standards to comply with the legal regulations of the banking industry.

What are the MOST suitable metrics that you would use to analyze the test results and create test reports that empower stakeholders to make decisions?

- a) Metrics related to product risks, defects, test progress, coverage, and costs and test effort.
- b) Metrics related to defects, test progress, coverage, and code coverage.
- c) Metrics related to product risks, defects, test progress, coverage, and environment/configuration coverage.
- d) Metrics related to defects, test progress, coverage, and residual costs for untested components.

Select ONE option.

## Section: Test Estimation

### Question 31 (1 Point)

As a test manager you have to consider many factors for estimating test efforts. This estimation can be revised as the testing progresses. Which of the following factors is **NOT** relevant for test estimation during INITIAL TEST PLANNING?

- a) The complexity and size of the software under test.
- b) The availability and skills of the test team members.
- c) The quality and reliability of the test tools and environment.
- d) The number and severity of the defects found during testing.

Select ONE option.

### Question 32 (3 Points)

You are working on an Agile project which takes place in multiple locations, and you are responsible for the test effort at your location. The testing strategy is a blend of risk-based testing, process-compliant test strategy, and reactive testing. Developers are following known Agile best practices, including automated component testing and continuous integration.

Your task is to estimate the system test effort required for a particular iteration by your test team.

Which TWO of the following statements best describe the appropriate test techniques or approaches you should use and how you should carry out the estimation in this situation?

- a) Consider the average effort required per identified risk in past iterations.
- b) Allocate time-boxed test sessions for each identified test charter.
- c) Estimate that most defects will be found during system test execution.
- d) Include effort to create detailed test documentation.
- e) Assume that system tests can reuse unit test data and environments.

Select TWO options.

### Question 33 (3 Points)

You are the test manager of a software project that follows the sequential model. Historical effort data based on requirements from similar projects, are available. The project requirements and the scope are fixed and well defined. However, the team setup for this project has not been finalized yet.

You need to estimate the test effort for the entire project based on the requirements specification document.

Which of the following techniques or approaches would be most suitable for your context?

- a) Estimation based on ratios.
- b) Planning Poker
- c) Three-point estimation
- d) Wideband Delphi

Select ONE option.

## Section: Defect Management

### Question 34 (2 Points)

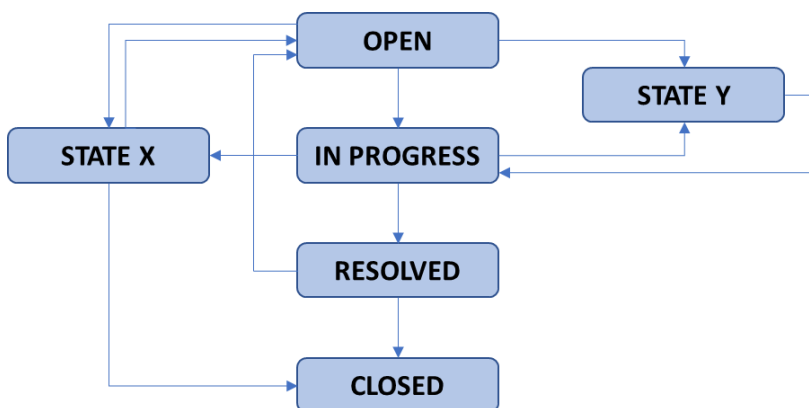
As a tester you are typically required to create a defect report whenever you observe a defect during testing. However, there may be situations where you might not create a defect report. Which of the following is a reason why a defect report may NOT be created after a defect is detected by a test?

- a) The failure is caused by a defect that was introduced in the same phase as the test.
- b) The failure is caused by a defect that is not to be tracked within the defect workflow.
- c) The failure is caused by an invalid test that does not match the requirements specification.
- d) The failure is caused by an anomaly that is not observed by the tester.

Select ONE option.

### Question 35 (2 Points)

The diagram shows an incomplete defect workflow, where two states (states X and Y) have yet to be named appropriately.



Which of the following would correctly complete the workflow?

- |                        |                         |
|------------------------|-------------------------|
| a) STATE X – RETESTED  | STATE Y – RE-OPENED     |
| b) STATE X – REJECTED  | STATE Y – CLARIFICATION |
| c) STATE X – DUPLICATE | STATE Y – TERMINATED    |
| d) STATE X – FIXED     | STATE Y – REJECTED      |

Select ONE option.

### Question 36 (1 Point)

Which of the following represents a complete 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.

- a) OPEN, IN PROGRESS, RESOLVED, CLOSED, DEFERRED.
- b) OPEN, IN PROGRESS, RETURNED, IN PROGRESS, RESOLVED.
- c) OPEN, IN PROGRESS, RESOLVED, CLOSED.
- d) IN PROGRESS, OPEN, RESOLVED, CLOSED.

Select ONE option.

### Question 37 (1 Point)

You are a tester in an agile team working on a new product. During the third sprint, while performing exploratory tests, you experienced a failure in the login feature which was developed during the first sprint in cooperation with the team responsible for the Identity Provider (IDP).

What is one reason why you would choose **NOT** to create a defect report in this case?

- a) The developer will not have time to work on the fix until the following week.
- b) You need to clarify the failure with a developer of your team first.
- c) This failure will require cooperation with the IDP team.
- d) According to the Product Owner, this failure has low severity and should be fixed in the next iteration.

Select ONE option.

### Question 38 (1 Point)

Nowadays multiple software development methodologies are used. Different methodologies in the SDLC call for an adapted test approach.

You are a test manager in a software development project which operates in a hybrid environment. Which of the following is MOST relevant regarding defect management in this context?

- a) All teams use the same defect management tool, whatever their methodology is.
- b) Frequency of the defect management committee meetings should be determined by the largest team.
- c) Agile teams should schedule their defect fixing priorities to align with the overall project plan.
- d) All team members agree on the prioritization of the defects.

Select ONE option.

## Question 39 (2 Points)

Defect ID: [Insert Defect ID here]

Status: 24.06.2024

Edited by [Max Mustermann]

Component: [Insert the specific component here]

Subsystem: [Insert the specific subsystem here]

Which of the following data items is NOT mandatory for managing defect reports in most environments?

- a) A defect title with a short summary of the anomaly
- b) The subsystem or component in which the defect lies
- c) Severity of the impact on the system under test and/or the product stakeholders
- d) Priority to fix the anomaly

Select ONE option.

## Question 40 (2 Points)

You are the test manager on a project where system testing is being performed on software 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.

Which of the following options could have been identified as missing from the defect reports sent to the third party?

- a) The project activity occurring when the problem was detected.
- b) Steps to reproduce the failure, along with the actual and expected results.
- c) The priority to fix the problem.
- d) The technical type of the defect.
- e) The software lifecycle phase in which the defect was detected.

Select TWO options.

## Question 41 (1 Point)

Your organization has decided that it aims to improve its test and development process by reducing the number of defects introduced during development, based on already existing defect reports.

Which of the following defect report information will be MOST useful in fulfilling this objective?

- a) The software lifecycle phases of detection, and removal of the defect.
- b) The defect's root cause information.
- c) The number of defects per component.
- d) The efficiency of the elimination of defects.

Select ONE option.

## Section: Test Team

### Question 42 (1 Point)

As a test manager you are looking for new team members. You have to write a job posting. In this posting you include the required competences of the new team members. Which of the following skills is an example of methodical competence for a test team member?

- a) Ability to apply test techniques to design test cases.
- b) Ability to communicate test results to relevant stakeholders.
- c) Ability to manage test activities and resources.
- d) Ability to learn new technologies and tools.

Select ONE option.

### Question 43 (3 Points)

You are responsible for staffing a test team in a company that develops a brake system for a domestic motor vehicle manufacturer. While the development of the individual software components is carried out by several AGILE teams, the system development (consisting of software and hardware) is carried out according to the V-model in close cooperation with the Agile teams.

The brake system is classified as safety-critical. The tests must be state of the art in design and documentation.

The test analyst for the system tests leaves your company while the project is in the critical phase of the system test, and the position must be filled quickly. The main task of the test analyst was the test design of the integration test in cooperation with the AGILE teams and the requirement-based test design for the system tests.

Based on the information above, what is the MINIMUM combination of skills and qualifications required for this position?

- a) Black-box test techniques; communication skills; resilience; test documentation according to ISO 29119
- b) Black-box test techniques; programming skills; resilience; AGILE certification
- c) Communication skills; ability to delegate work; intercultural competence; test documentation according to ISO 29119
- d) Intercultural competence; communication skills; black-box test techniques; ability to delegate.

Select ONE option.

### Question 44 (3 Points)

You are in a test management role in a software project that uses an Agile software development lifecycle (SDLC) and involves developing a web application for an online gambling platform. The project has a small cross-functional team that works closely with the customer. The project has a high level of uncertainty and complexity due to the frequent changes in requirements and technology. The project also has strict quality and security standards to comply with the legal regulations of the gambling industry.

Based on the given project context, what are the MOST important skills you would look for when selecting test team members for this project?

- a) Business expertise in the gambling industry, technical expertise in web technologies and security vulnerabilities, technical expertise for automating test execution, communication and cooperation skills, self-management and discipline skills.
- b) Conceptual knowledge for developing a test strategy, project management skills for managing all test tasks, analytical skills in analyzing the test basis and the product risks, judgment skills for the selection of tests.
- c) Skills in test techniques and conceptual knowledge for designing the test environments, technical expertise for test script programming and setting up test environments, technical expertise for automating test execution, communication and cooperation skills.
- d) Business expertise in the gambling industry, technical expertise in programming languages and interface technology, knowledge about test levels, testing roles, and specific test techniques, conflict resolution skills.

Select one option.

### Question 45 (1 Point)

As a test manager, you are responsible for assessing the existing skills of team members in order to compare them with the required technical and methodological skills.

Which of the following approaches is NOT suitable for assessing existing technical and methodological skills?

- a) You can see how knowledgeable the members of the test team are by giving them typical test tasks and evaluating how they solve them.
- b) Team members can be assessed using the Belbin team role model, which can then be used to determine their coverage of technical and methodological competencies.
- c) You can evaluate the skills of individual members of the test team by reviewing and classifying their credentials, certificates, and references.
- d) In agile projects, retrospectives can be used to work with the team to identify existing and missing technical and methodological skills.

Select ONE option.

### Question 46 (1 Point)

Developing the skills and competences of your team members is important to establish and maintain a high performing test team. As a test manager you have to establish personal development plans for your project team. Which of the following statements about approaches for development of test team member skills is correct?

- a) Training and coaching both involve predefined content delivered to multiple participants simultaneously.
- b) Self-study is a recommended approach to develop social skills.
- c) In peer learning, an experienced team member provides ongoing guidance to a new team member.
- d) Coaching provides individual guidance to a person new to a role, helping them find solutions to improve their competencies.

Select ONE option.

### Question 47 (1 Point)

Leading a team requires specific skills. Which of the following statements about leading a test team is correct?

- a) In a test team, willingness to help is more important than the ability to delegate.
- b) When a new test team forms, the ability to act with appreciation is the most important competence.
- c) Throughout the test team's lifecycle, all skills are equally important.
- d) The ability to resolve conflicts helps to gain consensus around rules and roles in the early stages of group development.

Select ONE option.

## Section: Stakeholder Relationships

### Question 48 (1 Point)

Consider these categories of quality costs:

1. Prevention costs
2. Appraisal costs
3. Internal failure costs
4. External failure costs

These are the examples of quality-related activities:

- A. Early acceptance testing for fast feedback
- B. Performing a product risk analysis
- C. Customer complaints about poor performance
- D. Long lag time from defect reporting to resolution during testing causing increased defect management inefficiency

Which of the following CORRECTLY matches the categories of quality costs with their examples in software development?

- |                |       |       |
|----------------|-------|-------|
| a) 1 – A 2 – B | 3 – C | 4 – D |
| b) 1 – B 2 – A | 3 – D | 4 – C |
| c) 1 – A 2 – B | 3 – D | 4 – C |
| d) 1 – B 2 – A | 3 – C | 4 – D |

Select ONE option.

### Question 49 (2 Points)

You are managing the testing of a mature online dating service application. The application allows users to create profiles, match with compatible people, arrange social events, and block unwanted contacts. You need to calculate the cost-benefit of testing for this application.

You have calculated the following costs of quality per defect:

- Appraisal costs: \$150
- Internal failure costs: \$250
- External failure costs: \$5,000

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

Based on the above information, which of the following statements is correct for this application?

- a) The total cost of quality for this dating application is likely to be around \$5,500, including prevention costs.
- b) Each defect found by testing offers the organization an average of \$4,600 in savings in cost of quality.
- c) While cost of quality is useful in many industries, it has limited applicability in calculating the value of testing for software applications.
- d) Testing provides a potential cost saving of \$5,400 per defect by identifying issues before they reach the customer.

Select ONE option.

## Question 50 (2 Points)

You are the test manager of a software project with a budget of €100,000 and a deadline of six months. You have estimated that:

- the average defect prevention cost per defect is €150,
- the average appraisal cost is €400,
- the average internal defect cost per failure is €250,
- and the average external defect cost per failure is €3,000.

You have also determined the following project characteristics:

- The requirements are unclear and can change frequently.
- The technology used is new and unfamiliar to the development team.
- The customer has high expectations in terms of quality and reliability.
- The project has a tight schedule and scope.

Based on the information, which of the following scenarios do NOT include a correct conclusion?

- a) Due to the ambiguity of the requirements, the average internal failure cost per defect doubles over the course of the project, resulting in an average saving of only €2100 per defect.
- b) Becoming familiar with the technology in use triples the cost of defect prevention, but these costs are not included in the average savings per defect. Therefore, the savings remain unaffected at €2,350.
- c) In order to meet the customer's tight deadline, the reactive measures of repeating the tests before delivery are omitted. This leads to fewer issues found pre-release and external defect costs decrease to €2,000 per defect escaped. As a result, the average savings per defect are reduced to €1,350.
- d) To meet the client's tight deadline, the test team is expanded at short notice, causing the appraisal costs to rise to €500. As a result, the average savings per defect increase by €100 each.

Select ONE option.

## Appendix: Additional Questions

### Section: Test Process

#### Question #A1 (1 Point)

As a test manager you have to establish checklists in many different phases of your test project. Which of the following is the most accurate description of a “test completion check”?

- a) A test completion check ensures that all testware is completed as planned.
- b) A test completion check ensures that all important lessons learned are documented.
- c) A test completion check ensures that all testware are stored in the configuration management system.
- d) A test completion check ensures that test plans are developed to ensure that good practices are repeatable.

Select ONE option.

### Section: Context of Testing

#### Question #A2 (1 Point)

As a test manager you have to perform different activities at different test levels. Which of the following is NOT a test management activity at the system testing level?

- a) Defining the test scope
- b) Selecting the tools and test techniques
- c) Deciding which parts need to be integrated and tested
- d) Managing defects throughout the test process

Select ONE option.

#### Question #A3 (1 Point)

As a test manager you have to align your test management activities with the test types. Which of the following is a test management activity for white-box testing, but not for functional or non-functional testing?

- a) Define the scope.
- b) Determine the test tools and test environments.
- c) Measure the coverage of statements.
- d) Monitor test execution based on prioritization of test cases.

Select ONE option.

## Section: Risk-based testing

### Question #A4 (1 Point)

An Agile team is developing a new web-based application. Which of the factors below will MOST likely NOT influence the level of quality risks?

- a) The user acceptance testing (UAT) team is assigned to other several high-priority projects.
- b) A new business analyst joined the Agile team with strong domain knowledge, but little test automation experience.
- c) Most of the development team is in India, but the product owner is located in the USA.
- d) A new defect management process has been introduced within the company which is unfamiliar to the developers.

Select ONE option.

### Question #A5 (1 Point)

As a test manager you want to allocate test efforts effectively and decide to use a risk-based testing approach. Which of the following is the MOST problematic when using risk-based testing?

- a) The project has ten different stakeholders who all want to contribute to risk analysis.
- b) The test team starts out with risk-based test planning but neglects risk control due to project pressure.
- c) The risk items and risk levels of a project are not reused in other projects.
- d) The stakeholders understand the level of the residual risk and may decide to go live before all tests are executed.

Select ONE option.

## Section: Improving the Testing Process

### Question #A6 (1 Point)

You join an existing project as a test manager. The development team is responsible for the enhancement and maintenance of an important product of the company's flagship product. New versions are released on a regular basis. However, the product has a reputation for poor quality and customers frequently complain about the number of defects. You are now asked to look for improvements to the testing of the project.

Which TWO of the following actions follow an analytical-based test process improvement approach that addresses the problem discussed in the scenario?

- a) Implement a defect classification scheme for the origin and type of defects and classify the customer-reported defects according to this scheme.
- b) Compare the practices that your test team apply for test design and test implementation with the practices defined by the TMMi Model.
- c) Determine the number of defects reported by your test team during the system test of the last release, as well as the number of defects reported by your customers for that release and compute the defect detection percentage.
- d) Initiate a company-wide Goal Question Metric (GQM)-based measurement program that evaluates the accuracy of the test estimates across all projects.
- e) Introduce a new test automation tool to reduce the test execution effort.

Select TWO options.

## Section: Test Tools

### Question #A7 (1 Point)

Your company currently uses a 15-year-old test management tool. The switch from a waterfall development model to an agile development model demands features which are not provided by your current test management tool. To successfully switch the development approach, your company decides to introduce a new test management tool.

Which of the given examples is a valid consideration for the selection of a test tool?

- a) Vendor preferences of the development department head.
- b) The requirements from all stakeholders to evaluate and identify the most appropriate tool.
- c) The test tool needs to match the corporate design standards of your company.
- d) The tool must be less expensive than the current tool in order to be efficient.

Select ONE option.

### Question #A8 (1 Point)

You are responsible for test management of a reporting engine for a banking system. The project started one month ago. Project management asks you to provide an overview of the progress that has been made on at least a weekly basis.

As you currently have not yet set up metrics, what needs to be done to satisfy the needs of project management?

- a) Make sure traceability is included in your metrics.
- b) Gather the information needs of the test team and project management.
- c) Activate all possible metrics to give the project management free choice of information.
- d) Start with defect management, as there are acceptance criteria for defects with 'high' priority and severity.

Select ONE option.

## Section: Test Estimation

### Question #A9 (1 Point)

You have to estimate the test effort in an Agile software development project. Which of the following statements is TRUE about test estimation in this context?

- a) Test estimation is done separately from development estimation and is based on the test levels and activities.
- b) Test estimation is done as part of development estimation and is based on the user stories and acceptance criteria.
- c) Test estimation is not done at all in Agile projects and testing is performed on an ad-hoc basis.
- d) Test estimation is done by the customer or the product owner and is based on the business value and risk of the features.

Select ONE option.

### Question #A10a<sup>2</sup> (1 Point)

As a test manager you have to control time, effort and quality of your test project.

Which of the following will most likely influence the duration, but **NOT** the effort of the testing activities?

- a) Time to repair defects found during testing
- b) Maturity of the test process
- c) Required level of detail of test conditions
- d) Required quality of the system

Select ONE option.

### Question #A10b (1 Point)

As a test manager you have to consider many different factors to estimate the effort for your test project.

Which of the following should **NOT** be taken into consideration for test estimation in a test project?

- a) The qualification of the development team members
- b) Human skills and experiences of the developers
- c) Estimated effort in other ongoing projects
- d) The determined hours from the test effort estimation

Select ONE option.

Section: Test Team

### Question #A11 (1 Point)

A key factor of the performance of a test team is their motivation.

Which of the following is the best example of a motivating factor for a test team?

- a) Introduction of a labor wage agreement for all employees.
- b) Test activities and work products planned down to the last detail.
- c) A well running test environment.
- d) Recognition and appreciation for the work done.

Select ONE option.

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<sup>2</sup> #A10a and #A10b refers to the same LO.

