

Sample Exam - Questions

ISTQB® Certified Tester Syllabus

Foundation Level

Exam ID: A

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International Software Testing Qualifications Board



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Exam Working Group 2019

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

Acknowledgements

This document was produced by a core team from the International Software Testing Qualifications Board Examination Working Group: Foundation Working Group

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Revision History

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1.3	January 3, 2019	Sample Exam – Questions Layout Template used
1.0	May 11, 2018	First issue
1.1	May 11, 2018	Spelling error corrected
1.2	February 16, 2019	Transfer to Sample Exam Template layout Minor changes to Exam Questions Major changes to Exam Question: 5,15, 18, 23, 24, 27, 30, 31, 33, 35, 37

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Introduction

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.

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

Questions

Question #1 (1 Point)

Which one of the following answers describes a test condition?

- a) An attribute of a component or system specified or implied by requirements documentation.
- b) An aspect of the test basis that is relevant to achieve specific test objectives.
- c) The degree to which a software product provides functions which meet stated and implied needs when the software is used under specified conditions.
- d) The percentage of all single condition outcomes that independently affect a decision outcome that have been exercised by a test case suite.

Select ONE option.

Question #2 (1 Point)

Which of the following statements is a valid objective for testing?

- a) The test should start as late as possible so that development had enough time to create a good product.
- b) To find as many failures as possible so that defects can be identified and corrected.
- c) To prove that all possible defects are identified.
- d) To prove that any remaining defects will not cause any failures.

Select ONE option.

Question #3 (1 Point)

Which of the following statements correctly describes the difference between testing and debugging?

- a) Testing identifies the source of defects; debugging analyzes the defects and proposes prevention activities.
- b) Dynamic testing shows failures caused by defects; debugging finds, analyzes, and removes the causes of failures in the software.
- c) Testing removes defects; debugging identifies the causes of failures.
- d) Dynamic testing prevents the causes of failures; debugging removes the failures.

Select ONE option.

Question #4 (1 Point)

Which one of the statements below describes a failure discovered during testing or in production?

- a) The product crashed when the user selected an option in a dialog box.
- b) The wrong version of a compiled source code file was included in the build.
- c) The computation algorithm used the wrong input variables.
- d) The developer misinterpreted the requirement for the algorithm.

Select ONE option.

Question #5 (1 Point)

Mr. Smith has been testing software applications on mobile devices for a period of 5 years. He has a wealth of experience in testing mobile applications and achieves better results in a shorter time than others. Over a longer period of time Mr. Smith did not modify the existing automated test cases and did not create any new test cases. This leads to fewer and fewer defects being found by executing the tests. What principle of testing did Mr Smith not observe?

- a) Testing depends on the environment.
- b) Complete testing is not possible.
- c) Repeats have no effectiveness.
- d) Accumulation of defects.

Select ONE option.

Question #6 (1 Point)

In what way can testing be part of Quality Assurance?

- a) It ensures that requirements are detailed enough.
- b) It reduces the level of risk to the quality of the system.
- c) It ensures that standards in the organization are followed.
- d) It measures the quality of software in terms of number of executed test cases.

Select ONE option.

Question #7 (1 Point)

Which of the following activities is part of the main activity "test analysis" in the test process?

- a) Identifying any required infrastructure and tools.
- b) Creating test suites from test scripts.
- c) Analyzing lessons learned for process improvement.
- d) Evaluating the test basis for testability.

Select ONE option.

Question #8 (1 Point)

Differentiate the following test work products (1-4) by mapping them to the right description (A-D).

1. Test suite.
 2. Test case.
 3. Test script.
 4. Test charter.
-
- A. A group of test scripts or test execution schedule.
 - B. A set of instructions for the execution of a test.
 - C. Contains expected results.
 - D. An instruction of test goals and possible test ideas on how to test.
-
- a) 1A, 2C, 3B, 4D.
 - b) 1D, 2B, 3A, 4C.
 - c) 1A, 2C, 3D, 4B.
 - d) 1D, 2C, 3B, 4A.

Select ONE option.

Question #9 (1 Point)

How can white-box testing be applied during acceptance testing?

- a) To check if large volumes of data can be transferred between integrated systems.
- b) To check if all code statements and code decision paths have been executed.
- c) To check if all work process flows have been covered.
- d) To cover all web page navigations.

Select ONE option.

Question #10 (1 Point)

Which of the following statements comparing component testing and system testing is TRUE?

- a) Component testing verifies the functionality of software modules, program objects, and classes that are separately testable, whereas system testing verifies interfaces between components and interactions between different parts of the system.
- b) Test cases for component testing are usually derived from component specifications, design specifications, or data models, whereas test cases for system testing are usually derived from requirement specifications or use cases.
- c) Component testing only focuses on functional characteristics, whereas system testing focuses on functional and non-functional characteristics.
- d) Component testing is the responsibility of the testers, whereas system testing typically is the responsibility of the users of the system.

Select ONE option.

Question #11 (1 Point)

Which one of the following is TRUE?

- a) The purpose of regression testing is to check if the correction has been successfully implemented, while the purpose of confirmation testing is to confirm that the correction has no side effects.
- b) The purpose of regression testing is to detect unintended side effects, while the purpose of confirmation testing is to check if the system is still working in a new environment.
- c) The purpose of regression testing is to detect unintended side effects, while the purpose of confirmation testing is to check if the original defect has been fixed.
- d) The purpose of regression testing is to check if the new functionality is working, while the purpose of confirmation testing is to check if the originally defect has been fixed.

Select ONE option.

Question #12 (1 Point)

Which one of the following is the BEST definition of an incremental development model?

- a) Defining requirements, designing software and testing are done in a series with added pieces.
- b) A phase in the development process should begin when the previous phase is complete.
- c) Testing is viewed as a separate phase which takes place after development has been completed.
- d) Testing is added to development as an increment.

Select ONE option.

Question #13 (1 Point)

Which of the following should NOT be a trigger for maintenance testing?

- a) Decision to test the maintainability of the software.
- b) Decision to test the system after migration to a new operating platform.
- c) Decision to test if archived data is possible to be retrieved.
- d) Decision to test after "hot fixes".

Select ONE option.

Question #14 (1 Point)

Which of the following options are roles in a formal review?

- a) Developer, Moderator, Review leader, Reviewer, Tester.
- b) Author, Moderator, Manager, Reviewer, Developer.
- c) Author, Manager, Review leader, Reviewer, Designer.
- d) Author, Moderator, Review leader, Reviewer, Scribe.

Select ONE option.

Question #15 (1 Point)

Which activities are carried out within the planning of a formal review?

- a) Collection of metrics for the evaluation of the effectiveness of the review.
- b) Answer any questions the participants may have.
- c) **Verification of input criteria for the review..**
- d) Evaluation of the review findings against the exit criteria.

Select ONE option.

Question #16 (1 Point)

Which of the review types below is the BEST option to choose when the review must follow a formal process based on rules and checklists?

- a) Informal Review.
- b) Technical Review.
- c) Inspection.
- d) Walkthrough.

Select ONE option.

Question #17 (1 Point)

Which TWO of the following statements about static testing are MOST true?

- a) Static testing is a cheap way to detect and remove defects.
- b) Static testing makes dynamic testing less challenging.
- c) Static testing allows early validation of user requirements.
- d) Static testing makes it possible to find run-time problems early in the lifecycle.
- e) When testing safety-critical system, static testing has less value because dynamic testing finds the defects better.

Select TWO options.

Question #18 (1 Point)

You will be invited to a review. The result to be reviewed is a description of the in-house document creation process. The aim of the description is to present the work distribution between the different roles involved in the process in a way that can be clearly understood by everyone. You will be invited to a checklist-based review. The checklist will also be sent to you. It includes the following points:

- a) Is the person who performs the activity clearly identified for each activity?
- b) Is the entry criteria clearly defined for each activity?
- c) Is the exit criteria clearly defined for each activity?
- d) Are the supporting roles and their scope of work clearly defined for each activity?

In the following we show an excerpt of the work result to be reviewed, for which you should use the checklist above:

"After checking the customer documentation for completeness and correctness, the software architect creates the system specification. Once the software architect has completed the system specification, he invites testers and verifiers to the review. A checklist describes the scope of the review. Each invited reviewer creates review comments - if necessary - and concludes the review with an official review done-comment."

Which of the following statements about your review is correct?

- a) Point b) of the checklist has been violated because it is not clear which condition must be fulfilled in order to invite to the review.
- b) You notice that in addition to the tester and the verifier, the validator must also be invited. Since this item is not part of your checklist, you do not create a corresponding comment.
- c) Point c) of the checklist has been violated as it is not clear what marks the review as completed.
- d) Point a) of the checklist has been violated because it is not clear who is providing the checklist for the invitation to the review.

Select ONE option.

Question #19 (1 Point)

What is checklist-based testing?

- a) A test technique in which tests are derived based on the tester's knowledge of past faults, or general knowledge of failures.
- b) Procedure to derive and/or select test cases based on an analysis of the specification, either functional or non-functional, of a component or system without reference to its internal structure.
- c) An experience-based test technique whereby the experienced tester uses a list of items to be noted, checked, or remembered, or a set of rules or criteria against which a product has to be verified.
- d) An approach to testing where the testers dynamically design and execute tests based on their knowledge, exploration of the test item and the results of previous tests.

Select ONE option.

Question #20 (1 Point)

Which one of the following options is categorized as a black-box test technique?

- a) A technique based on analysis of the architecture.
- b) A technique checking that the test object is working according to the technical design.
- c) A technique based on the expected use of the software.
- d) A technique based on formal requirements.

Select ONE option

Question #21 (1 Point)

The following statement refers to decision coverage:

“When the code contains only a single ‘if’ statement and no loops or CASE statements, and its execution is not nested within the test, any single test case we run will result in 50% decision coverage.”

Which of the following statement is correct?

- a) The statement is true. Any single test case provides 100% statement coverage and therefore 50% decision coverage.
- b) The statement is true. Any single test case would cause the outcome of the “if” statement to be either true or false.
- c) The statement is false. A single test case can only guarantee 25% decision coverage in this case.
- d) The statement is false. The statement is too broad. It may be correct or not, depending on the tested software.

Select ONE option.

Question #22 (1 Point)

Which one of the following is the description of statement coverage?

- a) It is a metric which is used to calculate and measure the percentage of test cases that have been executed.
- b) It is a metric, which is used to calculate and measure the percentage of statements in the source code that have been executed.
- c) It is a metric, which is used to calculate and measure the number of statements in the source code that have been executed by test cases that are passed.
- d) It is a metric that gives a true/false confirmation if all statements are covered or not.

Select ONE option.

Question #23 (1 Point)

Which statement about the relationship between statement coverage and decision coverage is true?

- a) 100% decision coverage also guarantees 100% statement coverage.
- b) 100% statement coverage also guarantees 100% decision coverage.
- c) 50% decision coverage also guarantees 50% statement coverage.
- d) Decision coverage can never reach 100%.

Select ONE option.

Question #24 (1 Point)

For which of the following situations is explorative testing suitable?

- a) If due to time pressure requires speeding up the execution of tests already specified.
- b) If the system is developed incrementally and no test charter is available.
- c) If testers are available who have sufficient knowledge of similar applications and technologies.
- d) If an advanced knowledge of the system already exists and evidence is to be provided that it should be tested intensively.

Select ONE option.

Question #25 (1 Point)

An employee's bonus is to be calculated. It cannot be negative, but it can be calculated down to zero. The bonus is based on the length of employment:

- less than or equal to 2 years,
- more than 2 years but less than 5 years,
- 5 to 10 years inclusively or longer than 10 years.

What is the minimum number of test cases required to cover all valid equivalence partitions for calculating the bonus?

- a) 3.
- b) 5.
- c) 2.
- d) 4.

Select ONE option.

Question #26 (1 Point)

A speed control and reporting system has the following characteristics:

If you drive 50 km/h or less, nothing will happen.

If you drive faster than 50 km/h, but 55 km/h or less, you will be warned.

If you drive faster than 55 km/h but not more than 60 km/h, you will be fined.

If you drive faster than 60 km/h, your driving license will be suspended.

The speed in km/h is available to the system as an integer value.

Which would be the most likely set of values (km/h) identified by applying the boundary value analysis, where only the boundary values on the boundaries of the equivalence classes are relevant? 0, 49, 50, 54, 59, 60.

- a) 50, 55, 60.
- b) 49, 50, 54, 55, 60, 62.
- c) 50, 51, 55, 56, 60, 61.

Select ONE option.

Question #27 (1 Point)

A company's employees are paid bonuses if they work more than a year in the company and achieve a target which is individually agreed before.

These facts can be shown in a decision table:

Test-ID		T1	T2	T3	T4
Condition1	Employment for more than 1 year?	YES	NO	NO	YES
Condition2	Agreed target?	NO	NO	YES	YES
Condition3	Achieved target?	NO	NO	YES	YES
Action	Bonus payment	NO	NO	NO	NO

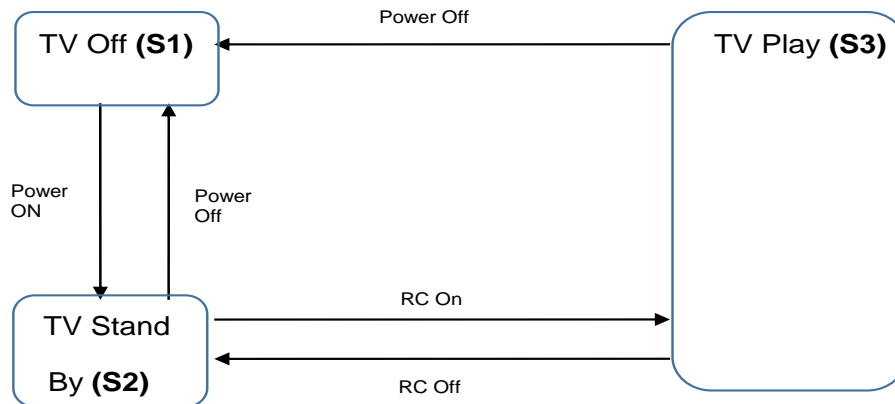
Which test case for a real life scenario is missing in the above decision table?

- a) Condition1 = YES, Condition2 = NO, Condition3 = YES, Action= NO
- b) Condition1 = YES, Condition2 = YES, Condition3 = NO, Action= YES
- c) Condition1 = NO, Condition2 = NO, Condition3 = YES, Action= NO
- d) Condition1 = NO, Condition2 = YES, Condition3 = NO, Action= NO

Select ONE option.

Question #28 (1 Point)

Which of the following statements about the given state transition diagram and table of test cases is TRUE?



Test Case	1	2	3	4	5
Start State	S1	S2	S2	S3	S3
Input	Power On	Power Off	RC On	RC Off	Power Off
Expected Final State	S2	S1	S3	S2	S1

- a) The given test cases can be used to cover both valid and invalid transitions in the state transition diagram.
- b) The given test cases represent all possible valid transitions in the state transition diagram.
- c) The given test cases represent only some of the valid transitions in the state transition diagram.
- d) The given test cases represent pairs of transitions in the state transition diagram.

Select ONE option.

Question #29 (1 Point)

A video application has the following requirement: The application shall allow playing a video on the following display resolution:

1. 640x480.
2. 1280x720.
3. 1600x1200.
4. 1920x1080.

Which of the following list of test cases is a result of applying the equivalence partitioning test technique to test this requirement?

- a) Verify that the application can play a video on a display of size 1920x1080 (1 test case).
- b) Verify that the application can play a video on a display of size 640x480 and 1920x1080 (2 test cases).
- c) Verify that the application can play a video on each of the display sizes in the requirement (4 test cases).
- d) Verify that the application can play a video on any one of the display sizes in the requirement (1 test case).

Select ONE option.

Question #30 (1 Point)

Which of the following statements BEST describes how tasks are divided between the test manager and the tester?

- a) The test manager plans testing activities and chooses the standards to be followed, while the tester chooses the tools and their guidelines to be used.
- b) The test manager plans and controls the testing activities, while the tester specifies the tests and decides on the test automation framework.
- c) The test manager plans, monitors, and controls the testing activities, while the tester designs tests and decides on the release of the test object.
- d) The test manager plans and organizes the testing and specifies the test cases, while the tester prioritizes and executes the tests.

Select ONE option.

Question #31 (1 Point)

Which of the following metrics would be MOST useful to monitor during test execution?

- a) Percentage of executed test cases.
- b) Average number of testers involved in the test execution.
- c) Coverage of requirements by source code.
- d) Percentage of test cases already created and reviewed .

Select ONE option.

Question #32 (1 Point)

Which TWO of the following can affect and be part of the (initial) test planning?

- a) Budget limitations.
- b) Test objectives.
- c) Test log.
- d) Failure rate.
- e) Use cases.

Select TWO options.

Question #33 (1 Point)

Which of the following lists contains only typical exit criteria from testing?

- a) Reliability measures, test coverage, test cost, schedule and status about fixing errors and remaining risks.
- b) Reliability measures, test coverage, degree of tester's independence and product completeness.
- c) Reliability measures, test coverage, test cost, availability of test environment, time to market and product completeness.
- d) Time to market, remaining defects, tester qualification, availability of testable use cases, test coverage and test cost.

Select ONE option.

Question #34 (1 Point)

Which one of the following is NOT included in a test summary report?

- a) Defining pass/fail criteria and objectives of testing.
- b) Deviations from the test approach.
- c) Measurements of actual progress against exit criteria.
- d) Evaluation of the quality of the test item.

Select ONE option.

Question #35 (1 Point)

The project develops a "smart" heating thermostat. The control algorithms of the thermostat were modeled as Matlab/Simulink models and run on the internet connected server. The thermostat uses the specifications of the server to trigger the heating valves.

The test manager has defined the following test strategy/approach in the test plan:

1. The acceptance test for the whole system is executed as an experience-based test.
2. The control algorithms on the server are tested during implementation using continuous integration.
3. The functional test of the thermostat is performed as risk-based testing.
4. The security tests of data / communication via the internet are executed together with external security experts.

What four common types of test strategies/approaches did the test manager implement in the test plan?

- a) methodical, analytical, reactive and performance preserving.
- b) analytical, model-based, consultative and reactive.
- c) model-based, methodical, analytical and consultative.
- d) performance-preserving, consultative, reactive and methodical.

Select ONE option.

Question #36 (1 Point)

Which one of the following is the characteristic of a metrics-based approach for test estimation?

- a) Budget which was used by a previous similar test project.
- b) Overall experience collected in interviews with test managers.
- c) Estimation of effort for test automation agreed in the test team.
- d) Average of calculations collected from business experts.

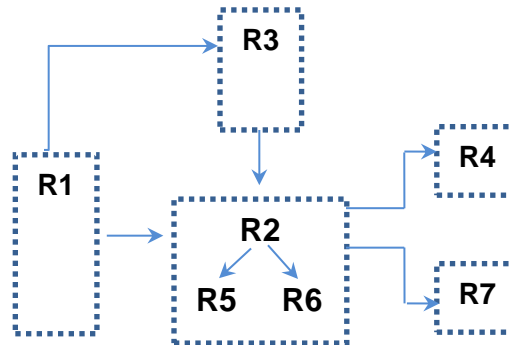
Select ONE option.

Question #37 (1 Point)

As a test manager you are responsible for testing the following requirements:

- R1 - Process anomalies
- R2 - Synchronization
- R3 - Approval
- R4 - Problem solving
- R5 - Financial data
- R6 - Diagram data
- R7 - Changes to the user profile

Notation: Logical requirement dependencies (A -> B means, that B depends on A):



Which one of the following options structures the test execution schedule according to the requirement dependencies?

- a) R1 -> R3 -> R4 -> R7 -> R2 -> R5 -> R6 .
- b) R1 -> R3 -> R2 -> R4 -> R7 -> R5 -> R6.
- c) R1 -> R3 -> R2 -> R5 -> R6 -> R4 -> R7.
- d) R1 -> R2 -> R5 -> R6 -> R3 -> R4 -> R7.

Select ONE option.

Question #38 (1 Point)

You are testing a new version of software for a coffee machine. The machine can prepare different types of coffee based on four categories. i.e., coffee size, sugar, milk, and syrup. The criteria are as follows:

- Coffee size (small, medium, large),
- Sugar (none, 1 unit, 2 units, 3 units, 4 units),
- Milk (yes or no),
- Coffee flavor syrup (no syrup, caramel, hazelnut, vanilla).

Now you are writing a defect report with the following information:

Title: Low coffee temperature.

Short summary: When you select coffee with milk, the time for preparing coffee is too long and the temperature of the beverage is too low (less than 40 °C)

Expected result: The temperature of coffee should be standard (about 75 °C).

Degree of risk: Medium

Priority: Normal

What valuable information was omitted in the above defect report?

- a) The actual test result.
- b) Data identifying the tested coffee machine.
- c) Status of the defect.
- d) Ideas for improving the test case.

Select ONE option.

Question #39 (1 Point)

Which one of the following is MOST likely to be a benefit of test execution tools?

- a) It is easy to create regression tests.
- b) It is easy to maintain version control of test assets.
- c) It is easy to design tests for security testing.
- d) It is easy to run regression tests.

Select ONE option.

Question #40 (1 Point)

Which test tool (A-D) is characterized by the classification (1-4) below?

1. Tool support for management of testing and testware.
 2. Tool support for static testing.
 3. Tool support for test execution and logging.
 4. Tool support for performance measurement and dynamic analysis.
-
- A. Coverage tools.
 - B. Configuration management tools.
 - C. Review tools.
 - D. Monitoring tools.
-
- a) 1A, 2B, 3D, 4C.
 - b) 1B, 2C, 3D, 4A.
 - c) 1A, 2C, 3D, 4B.
 - d) 1B, 2C, 3A, 4D.

Select ONE option.