Sample Exam – Questions
Sample Exam set A
Version 1.0.2

ISTQB® Agile Technical Tester Syllabus Advanced Level
Compatible with Syllabus version 1.1

International Software Testing Qualifications Board

Copyright Notice

Document Responsibility

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

Acknowledgements

Revision History

Sample Exam – Questions Layout Template used:	Version 2.4	Date: May 12, 2021

Version	Date	Remarks
1.0.2	May 12, 2021	Remove wrong, duplicate copyright notice
1.0.1	May 7, 2021	Update of copyright notice Cleanup of layout
1.0	November 14, 2019	First release

Table of Contents

Introduction

Purpose of this document

The sample questions and answers and associated justifications in this sample exam set 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 set is organized in the following way:

- Question - including any scenario followed by the question stem
- Answer option set

- Answers, including justification are contained in a separate document

Questions

Question #1 (3 Points)

As a tester, you are asked to improve the quality of Epics and User stories.

Which TWO of the following requirements engineering techniques would be the most effective for the given Epic?

"As the leader of the marketing department, I want to have a content management system so that my employees can edit and provide quality content to the readers".

a) Storyboard
b) Story mapping
c) Personas
d) Diagrams
e) Use Cases

Select TWO options.

Question #2 (1 Point)

Describe requirements engineering techniques and how they can help testers.

a) Each tester can easily see on the teams 'Storyboard' which tasks he/she has to do during the current iteration
b) A 'Storyboard' visualizes groups of user stories, related to a common area of the system (Themes), which can be considered for inclusion in the same iteration
c) A 'Storyboard' defines which test cases the tester has to execute in an Exploratory Test Session
d) A 'Storyboard' can assist with identifying acceptance criteria for user stories and epics

Select TWO options.

Question #3 (3 Points)

You must review following user story that will be developed and tested during next Sprint:

As a potential conference attendee, I want to be able to register for the conference online, so that registration is simple and paperless.

The following acceptance criteria are also mentioned:

- *Payment can be made via PayPal, Debit or Credit Cards*
- *An acknowledgement email is sent to the attendee after submitting the form*
- *Protection against spam is working*
- *Information from the form is stored in the registrations database*
- *User cannot submit a form without filling out all the mandatory fields:*
  First Name, Last Name, Company Name, Email Address, Position Title, Billing Information

Within the previous Sprints the database has been developed and the interface to the different payment methods and also the interface to the spam detection component is ready.

Which one of the following statements is correct according to this situation and the mentioned acceptance criteria?

a) All the mentioned acceptance criteria follow the meaning of INVEST characteristics
b) The acceptance criteria do not fulfill INVEST criteria and is therefore of bad quality
c) This user story is more like an Epic and therefore the mentioned acceptance criteria do not fit
d) As there are no non-functional acceptance criteria mentioned, the team has forgotten to use quantitative questionnaires

Select ONE option.

Question #4 (1 Point)

Which one of the following methodologies is not derived from Test-driven development?

a) Behavior Driven Development
b) Acceptance Test-driven development
c) Domain-driven design
d) Specification by example

Select ONE option.

Question #5 (1 Point)

Summarize the characteristics of unit tests:

a) Unit tests must be independent from other unit test to avoid the possibilities of cross references
b) Unit test can be derived from the given use cases and existing code of the test object
c) While refactoring, the redesign of the unit test to adapt to the changed code is crucial
d) A unit should be written against large and complex code structures to get fast and feedback of the code quality

Select ONE option.

Question #6 (2 Points)

A developer has implemented a class that calculates if a given date is a leap year. The definition for the leap year is given:

> *Every year that is exactly divisible by four is a leap year, except for years that are exactly divisible by 100, but these centurial years are leap years if they are exactly divisible by 400.*
> - *divisible by 4*
> - *but not by 100*
> - *years divisible by 400 are leap anyway*

You have already thought about it and started with the first test class; the test class looks like (pseudo JavaScript used here):

```
// LeapYear.spec.js
describe('Leap year calculator', () => {
        it('should consider 1996 as leap', () => {
                expect(LeapYear.isLeap(1996)).toBe(true);
        });
});
```

What would now be your next step to proceed as efficient as possible, to validate the correctness of the class above?

- a) Write additional test classes to test also other relevant aspects of the leap year calculation
- b) Start to write code that covers other relevant aspects of the leap year calculation
- c) Start to write code that makes fail this test case
- d) Start to write code that makes pass this test case

Select ONE option.

Question #7 (1 Point)

A Unit tests should fulfill the quality criteria, which are summarized by the mnemonic 'FIRST'. This means a Unit Test should be:

a)	Fast	Iso-compliant	Responsive	Self-Verifying	Thorough
b)	Fast	Isolated	Repeatable	Self- Validating	Thorough
c)	Failing	Isolated	Repeatable	Self- Validating	Thorough
d)	Fast	Iso-compliant	Repeatable	Self-Verifying	Atomic

Select ONE option.

Question #8 (2 Points)

You, as a tester in a BDD environment, know that the following user story must be implemented and tested:

As a Scrum Master
I want to see Lead/Cycle time progress
So that I know whether we are improving our development process or not

Which one of the following BDD scenarios in Gherkin format is at least partially, but best fitting to this user story?

a) Given Reports section in Project area and Bug Tracking practice is DISABLED
     When I navigate to Lead and Cycle Time Report
     Then I see Lead Time chart
     And chart contains 1 line for stories

b) Given Reports section in Project area and Bug Tracking practice is ENABLED
     If I navigate to Lead and Cycle Time Report
     Then I see Cycle Time
     And chart contains 2 lines (for stories and bugs)
     Else Error message is popping up

c) Given Reports section in Project area and Bug Tracking practice is DISABLED
     When I navigate to Lead and Cycle Time Report
     Then I see the chart
     And chart contains information for all stories

d) When Reports section in Project area and Bug Tracking practice is ENABLED
     Then I navigate to Report section
     And I see Cycle Time with chart containing 2 lines (for stories and bugs)

Select ONE option.

Question #9 (3 Points)

You are responsible to define the test strategy for the systems described in above scenario.

The following tables define various risk-based mixes of test approaches.

Select the table (see below) which shows the test approaches that fits at best the needs for testing the auto pilot system within simulated car driving in simulated environments.

This happens in later iterations stage where the system should behave mature, and which can generate most feedback to the development team during each iteration:

a)

Risk Level	Specification based manual testing	Manual Exploratory Testing	Automated Test Suites
High	++	+	+
Medium	++	+	o
Low	+	++	--

b)

Risk Level	Specification based manual testing	Manual Exploratory Testing	Automated Test Suites
High	++	+	++
Medium	+	-	++
Low	-	++	+

c)

Risk Level	Specification based manual testing	Manual Exploratory Testing	Automated Test Suites
High	O	++	++
Medium	o	+	+
Low	-	++	+

d)

Risk Level	Specification based manual testing	Manual Exploratory Testing	Automated Test Suites
High	++	o	o
Medium	+	++	-
Low	-	++	-

Select ONE option.

Question #10 (3 Points)

You are responsible in a highly regulated med-tech environment where development of the software is done following agile methods.

The project that you will check next is the replacement of the outdated configuration software for the bestselling blood analyzer on the market.

Technicians that are installing or maintaining this blood analyzer, will get new notebooks with Windows 10 and therefore it is necessary to replace the configuration software.

Which one of the below mentioned test strategies would be more appropriate?

  a) Run as well heavily automated tests as also black-box tests and in addition exploratory testing
  b) Run as well heavily automated tests as also black-box tests and in addition non-functional tests
  c) Run heavily exploratory as also black-box tests and in addition automated tests
  d) Run automated tests as also heavily black-box tests and in addition heavily exploratory testing

Select ONE option.

Question #11 (1 Point)

Summarize the characteristics of performing exploratory tests with test charters.

  a) In contradiction to black-box testing, the expected result is documented after a defect is found and not as part of the test design
  b) Test charters are a useful tool to be used for testing when a detailed specification to the system under test is given
  c) The result of performing exploratory testing by using test charters is finding defects and specification error
  d) Exploratory testing and black-box testing use the same metrics, when it comes to measure the test coverage

Select ONE option.

Question #12 (1 Point)

Refactoring of test cases is needed in agile because of many reasons. Below is description, reasons, and benefits. Choose the correct list.

  a) Refactoring of test cases is done to match and evolve the test cases due to changing functionality and changed code. Main benefits include improving the regression test cases, tests stay aligned with the code base and product functionality
  b) Refactoring of test cases is needed because we cannot maintain writing detailed test cases in short iterations in agile. Main benefits include keeping the pace of testing with development, creating new test cases fast
  c) In general, in agile world refactoring is a way to clean up test cases, in short iterations, by making them shorter. Main benefits include keeping pace with writing test cases fast, being able to test fast (short test cases) and being able to automate them fast
  d) Refactoring of test cases is done a process with the following steps: Identification, Refactor, Re-run, Identify again. Main benefits include improving the regression test cases, tests stay aligned with the code base and product functionality

Select ONE option.

Question #13 (3 Points)

You do have to analyze the following Bubble Sort function written in Java:

```
public static int[] bubblesort(int[] ToSort) {
        int temp;
        for (int i = 1; i < ToSort.length; i++) {
                for (int j = 0; j < ToSort.length - i; j++) {
                        if (ToSort[j] > ToSort[j++]) {
                                temp = ToSort[j];
                                Tosort[j] = ToSort[j++];
                                ToSort[j++] = temp;
                        }
                }
        }
        return ToSort;
}
```

Analyzation should be done according to the following checklist:

1. All Variables should start with a Capital letter, except they are used only as counting variable
2. If the name of the variable consists of more than one word, all words must start with Capital letters (e.g., FirstName)
3. All constants should be written in CAPITAL letters, except they are only used as start or end point (e.g., in loops)

Which one of the above-mentioned checkpoint items is not fulfilled?

a) 1
b) 2
c) 3
d) None

Select ONE option.

Question #14 (1 Point)

Which one of the following statements is true in regards test driven development?

a) Write a test that describes an unimplemented requirement. Run the test to ensure that it fails
b) Write production code that satisfies only the requirement described by the test. If it fails, make the changes necessary to cause all the tests to pass
c) To TDD you need to extract one or more scenario from each user story and then formulate them as automated tests
d) ATDD and TDD are customer focused whereas BDD is developer focused

Select ONE option.

Question #15 (1 Point)

Summarize the characteristics of test automation in relation to development projects.

   a) Test automation can play an important role in test environment configuration and test
       release acquisition
   b) In large projects, there is usually one best solution that fits all needs, and so. on dedicated
       test automation strategies fits best
   c) Test automation supports the goals of an iteration directly, e.g., by reducing the regression
       risk associated with stability of the system
   d) Supportive test automation effort must be done in the teams of the iteration teams
       themselves

Select ONE option.

Question #16 (1 Point)

An increased proportion of automated test coverage often leads to a greater degree of manual
testing that follows reactive strategies, because:

   a) Many of the tests that can be prepared upfront, will be automated which enables the testers
       to spend more time for execution of manual tests
   b) An increase of the proportion of automated test increases test coverage, and the uncovered
       areas are to be tested reactively
   c) If the proportion of automated tests increases, manual tests focus on the riskiest areas
       which are identified reactively
   d) Reactive strategies consider the current context and status of the project and the system
       under test. To be able to adopt to this status most flexible a greater degree of manual
       testing is necessary

Select ONE option.

Question #17 (1 Point)

The challenges described below are of test automation in agile settings or agile projects. Which is
the correctly described one?

   a) Resource's availability is a challenge in automating tests in agile settings, as they are
       needed to create, maintain, and execute the test suite
   b) Unit testing automation is the most critical test automation needed in agile and covers most
       of the testing challenges in agile quality of code and gives good test coverage
   c) Test deployment time is one of the challenges of agile testing, as deploying slow is not
       possible in short iterations
   d) Test Execution Time is not critical in agile as there are fewer tests written, and they are
       designed as checklists or high-level tests which reduces the time it takes to execute them

Select ONE option.

Question #18 (1 Point)

Which one of the statements listed below is true with regards to keyword "test driven development"?

a) Test procedures composed by keywords can be better understood by customers than plain program language test code
b) Agile teams can easily scale the necessary test coverage up or down by adding, changing, or removing entries from the test data table
c) A limitation is, that changing the behavior of a defined keyword requires much more effort than changing the same behavior across multiple test procedures
d) To effectively manage the set of keywords, the responsibility for managing the keyword vocabulary should stay in the team

Select ONE option.

Question #19 (2 Points)

You are working in a project that develops a product that has reached a stable state and is already in production in different configurations all over Europe.

To finalize it, the top management has decided to use that project as Proof of Concept for the new CI approach. This has been implemented and runs smoothly.

Which of one the following actions could you suggest improving this situation?

a) Enable different test configurations in the CI process to be used for the different types of CI cycles for the target markets
b) Speed up test execution by decreasing the amount of User Interface (UI) testing to give fast feedback on the CI approach
c) Prioritize testing so that the basic and most important tests are always executed to proof the new CI approach
d) Select and execute only those test cases affected by the changes (i.e., the use of impact analysis to select tests)

Select ONE option.

Question #20 (1 Point)

Which testing methodology emphasizes on examples rather than on real test scenarios?

    I.   Test-driven development (TDD)
   II.   Behavior Driven Development (BDD)
  III.   acceptance test-driven development (ATDD)
  IV.   specification by example (SBE)

a) I & II
b) III
c) IV
d) I, III & IV

Select ONE option.

Question #21 (1 Point)
Which of the following is the correct mnemonic for FIRST in TDD?

a) Fast, Isolated, Repeatable, Self-validating, Thorough
b) Fast, Isolated, Repeatable, self-checking, Testable
c) Focused, Isolated, Repeatable, Stand-alone, Testable
d) Fast, Interactive, Repeatable, Small scope, Test-driven

Select ONE option.

Question #22 (3 Points)
Exploratory testing is a well-known On-the-fly OR ad-hoc testing approach. Which of the following statements about it are true?

I. It is a structured and rigorous activity
II. Tester's mind is not in control as its about freedom and responsibility of individual tester
III. Tester should not have knowledge about the application and its functionality in advance
IV. It is often used as form of usability testing
V. Test charters used should be atomic
VI. Tester does not need to have prior experience in the field of testing as he/she is free to explore unbounded

a) I, II and IV
b) I and IV
c) III and V
d) II and VI

Select ONE option.

Question #23 (1 Point)
Which of the following factors contribute to code refactoring?

I. Presence of redundant code or unused variables
II. Over-complicated code design
III. Mostly to improve non-functional attributes of the software
IV. Increased technical debt

a) I and IV
b) I, II and IV
c) III and IV
d) All the above

Select ONE option.

Question #24 (3 Points)

How can one avoid technical debt?

      I.   Future planning
      II.   Code review and static code analysis
      III.   Enticement to save time and money
      IV.   Close collaboration with development team

a) II
b) II and IV
c) I, II and IV
d) All the above

Select ONE option.

Question #25 (3 Points)

Which of the following testing processes help in achieving continuous integration?

      I.   Risk based testing approach to test basic and most important changes
      II.   Cloud testing environment to replicate production environment for quick and real user outputs
      III.   Service virtualization to simulate the behavior of a connected system or service
      IV.   Segregation of test configuration for different types of CI cycles

a) I and III
b) III
c) II and IV
d) All the above

Select ONE option.

Question #26 (1 Point)

A functionality from Swiss Banking system is available in all environments 24 X 7 and it needs service for different transactions from a 3rd party software component. Does this SUT qualify for Service virtualization?

      I.   No, as there is an interface with an external service
      II.   Yes, to perform time controlled non-functional testing of SUT
      III.   Yes, to lower the cost of test infrastructure set-up as compared to the cost of testing with real 3rd party service since virtual service does not need to include all the functionality and test data of the actual external service
      IV.   No, as external services have some sort of inherent wait time associated with network travel time and virtual service can respond instantaneously as it is in the same network/environment as our SUT

a) I
b) II and III
c) III and IV
d) II, III and IV

Select ONE option.

Question #27 (1 Point)

The following is a list of Elicitation techniques descriptions. Choose the one which is described correctly.

a) Qualitative Questionnaires: Having Open-ended questions which are extremely effective way to add more quality to quantitative research. These types of questions are best used as a follow-up. The qualitative questionnaire takes more time than other techniques, thus fits as an elicitation technique for small group of stakeholders

b) Quantitative Questionnaires: is using data taken from open-ended questions to make comparisons between various data points. This will often provide data that can be included in a conclusion for an acceptance criterion

c) Qualitative Questionnaires: Yes/No questions are an extremely effective way to add more quality to quantitative research. They are best used as a follow-up to key questions. This could generate additional information for which new User Stories have to created or must be added to existing ones

d) Qualitative Interview: The qualitative interview is a lot less effective than a quantitative query and is mainly used to acquire information about backgrounds, contexts, and causes. It is likely to return good data, and acceptance criteria can be derived from the responses regarding the context of a user story

Select ONE option.

Question #28 (1 Point)

Which of the following can be used as an Elicitation technique to identify acceptance criteria?

a) Equivalence Partitioning, Decision tables, 6 Thinking Hats, SMART, INVEST, Quantitative Questionnaires

b) Equivalence Partitioning, Boundary Value Analysis, Statement Coverage, Path Coverage Analysis, INVEST, Qualitative Questionnaires

c) Decision tables, Equivalence Partitioning, SMART, Qualitative Interviews, Decision Coverage analysis, Apprenticing

d) Apprenticing, Boundary Value Analysis, Path Coverage Analysis, Decision Tables, Equivalence Partitioning

Select ONE option.

Question #29 (1 Point)

A 'Story Map' can help a tester, because …

a) It visualizes the order of priority of each 'User Story', which determines the priority of test execution

b) It maps test cases and test data to User Stories

c) the 'User Stories' contained in a 'Story Map' are in decreasing priority from 'top left' to "bottom right", which can help to define the test priorities of the test cases testing these 'User Stories'

d) It visualizes 'levels' of implementation (from basic to more sophisticated) which can be used to derive different corresponding sets of acceptance test cases

Select TWO options.

Question #30 (1 Point)

Select the criteria a successful 'regression-averse approach' for test automation should fulfill:

a) the set of regression tests grows in line with the growing set of features implemented
b) automated test cases from the set of regression tests are continuously improved and refactored
c) automated test cases are implemented in a way supporting good maintainability
d) the number of automated tests is limited by the number of tests given by the projects test pyramid

Select TWO options.

Question #31 (1 Point)

Which one of the following statements is true in regards story mapping?

a) Story mapping can be used to identify the order of functionalities to determine test priorities
b) Identifies integration points, which should be considered during test design
c) Visualize groups of user stories related to a common area of the system which can be considered for inclusion in the same iteration
d) Identifies gaps in user stories by identifying different types of users that may use the system

Select ONE option.

Question #32 (3 Points)

As a tester, you are asked to introduce the ATDD methodology in the team.

Which of the following points describe better the ATDD?

a) ATDD is customer focused rather than development
b) ATDD im development focused rather than customer
c) ATDD and TDD are both customer focused
d) ATDD and BDD are customer focused
e) BDD, ATDD, TDD are for both customer and development focused

Select TWO options.

Question #33 (2 Points)

You are working as test manager in a project and need to check huge amount of data. You think the approach of data-driven testing could be the correct solution.

You want to prepare a Proof of Concept (PoC) to decide if using DDT technique would help or not.

You have a collection of data to be used for the PoC.

Which is the best option from the list below?

    a) Ask the test automation team to create several TCs each covering a particular scenario and perform the PoC
    b) Ask the test automation team to adapt some existing TCs to work with given test data and perform the PoC
    c) Ask the test automation team to prepare a general TC to read all data and process them, then perform the PoC
    d) The PoC cannot be executed with the given data, but same TCs can be executed anyway to give an idea about the process quality

Select ONE option.

Question #34 (1 Point)

As part of test automation team, you are involved in definition of a new method to create and maintain new TCs. Some new methods are being checked and the decision now is to implement a Keyword-Driven Testing (KDT).

Which of the following points is better describing the method KDT?

    a) The main idea of a Keyword-driven Testing is
    b) Create a TC or a set of TCs, able to analyze the data, which will act as keyword, e.g., a Boolean will trigger a True/False path
    c) Write an interpreter and assign to every keyword (pre-defined vocabulary) a special application to be executed
    d) Create a set of TCs, each able to understand one given order (keyword), get the necessary data from a predefined DB and execute the command itself
    e) Create a set of macro language (keyword), based on them, a dispatcher TC will understand what/how to proceed

Select ONE option.

Question #35 (1 Point)

You are responsible for creating a test automation suite for some regression tests at different levels.

Which of the following combination is the correct one?

1. Smoke test
2. Unit test
3. System test
4. User acceptance test

A. Minimum test cases set execution
B. Medium test cases set execution
C. Ad-hoc created TCs
D. Full test cases set execution

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

Select ONE option.

Question #36 (1 Point)

Which is the best definition of continuous testing and continuous delivery?

Continuous testing:

A. The tester will perform test execution (manual, automatic) based on given timing, e.g., once per day at 7:00 as part of continuous delivery
B. The system will automatically trigger a sample test execution based on Developer decision (e.g., after every software replacement in the project library)
C. The test will be executed based on a new version of application, which can happen once a day, once a week or on demand as part of continuous delivery

Continuous delivery

1. The developer is asked to replace the code he has modified by end of day or on demand
2. The developer replaces his module once completed, the continuous testing can take place upon replacement of new software
3. The developer replaces his module once completed, a new version of app will be created, and the testing can take place upon completion

a) A and 3
b) C and 2
c) B and 3
d) B and 2

Select ONE option.

Question #37 (1 Point)

Please select the best choice for a definition of service virtualization:

a) A virtual machine, which can be setup to accomplish several tasks (services), to be used for different scopes from several users at same time. It is a closed system managed to reproduce the real behavior for performances checks
b) It is a process which simulates the relevant behavior, such as performance, data of a real service. It can be accessed simultaneously by several users
c) It is a physical system, which is tailored in different systems (virtual servers), they will then simulate a virtual service, with some representative performances, as it would be a real service
d) A virtual service is exactly a one-to-one replication of a physical server, with the difference it can be addressed by several user simultaneously, and each of them can address by a unique name, i.e., each user accesses the system by different names

Select ONE option.

Question #38 (2 Points)

The Test manager of a testing team is working together with a developer and they plan to have a continuous integration process established from the next release.

Which of the following elements are NOT part of a continuous integration:

a) The test cases to be executed need to be defined and prioritized
b) Several test configurations should be defined and made available, so that depending on a special phase, the correct configuration can be used
c) It is important to have a reduced well-defined set of TCs. The system test performed should not take longer than a predefined time. If the test will take longer, the task to overlap with next cycle can bring to useless results
d) Need to speed up the test execution, so that the performed TC, most related to unit test, will complete in a short time
e) It is a good rule to always execute the same TC as they are defined, if not the behavior, e.g., execution time, will differ from a run to another one, which would make the result not relevant

Select TWO options.

Question #39 (1 Point)

Refactoring is a process of restructuring computer code without changing its external behavior. Like all other process it had disadvantages too. Which ones are its disadvantages?

a) Regular additional time required for code review and analysis in each iteration
b) Overall time consuming as efforts are required to analyze and fix review comments
c) expensive as it needs regular maintenance
d) Unknown impacted areas impact test planning, specifically for regression tests

Select TWO options.

Question #40 (1 Point)

A 'Storyboard' can help a tester, because…

a) Each tester can easily see on the teams 'Storyboard', which tasks he/she must do during the current iteration
b) A 'Storyboard' visualizes groups of user stories related to a common area of the system
c) A 'Storyboard' defines which test cases the tester must execute in an Exploratory Test Session
d) A 'Storyboard' can assist with identifying acceptance criteria for user stories and epics

Select TWO options.