# Sample Exam – Questions

**Sample Exam Set A**
**Version 2.3**

# Certified Tester
# Automotive Software Tester
# Specialist

**Compatible with Syllabus Version 2.1**

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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®: Exam Working Group and German Testing Board e. V.

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# Revision History

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| Version | Date | Remarks |
|---|---|---|
| 2.3 | release date after BETA Review | Transfer into new template, updates for version 2.1 of the syllabus |
| 2.2 | 2023/05/12 | Bump to match Answer document version |
| 2.1.1 | 2021/05/25 | Update of Copyright Notice |
| 2.1 | 2019/11/12 | Layout update |
| 2.0 | 2018/07/04 | Updated in connection with ISTQB release |
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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, also this sample exam may be more difficult or less difficult than any official exam.

## Instructions

In this document you may find:

- Questions[1], 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 justification are contained in a separate document*

[1] In this sample exam the questions are sorted by the LO they target; this cannot be expected of a live exam.

# Questions

## Question #1 (1 Point)

What are the six generic stages in the automotive system lifecycle according to ISO 24748-1:2024?

a) Concept, Development, Acceptance, Utilization, Support, Retirement
b) Concept, Development, Production, Release, Support, Retirement
c) Concept, Implementation, Production, Utilization, Support, Retirement
d) Concept, Development, Production, Utilization, Support, Retirement

Select ONE option.

## Question #2 (1 Point)

Which of the following statements is TRUE?

a) The release recommendation of the Certified Automotive Software Tester does NOT have any influence on the release
b) The release level of the test object does NOT have any influence on the work of the Certified Automotive Software Tester
c) The release recommendation of the Certified Automotive Software Tester does NOT have any influence on the level of maturity of the corresponding software
d) The release recommendation does NOT have any influence on the scope of delivery

Select ONE option.

## Question #3 (1 Point)

With which of the measures listed below can the objectives of an increasingly complex software development project be best achieved in the short run?

a) By insourcing an outsourced project
b) By using effective methods and processes
c) By ensuring efficient qualification of employees
d) By outsourcing of complex projects

Select ONE option.

## Question #4 (1 Point)

Which Automotive SPICE (ASPICE) process is particularly important from the point of view of an employee in the role of a Certified Automotive Software Tester?

a) System requirements analysis
b) Configuration management
c) Software verification
d) Project management

Select ONE option.

## Question #5 (1 Point)

Which of the following is a dimension defined in ASPICE?

a) Process dimension
b) Time dimension
c) Resource dimension
d) Objective dimension

Select ONE option.

## Question #6 (1 Point)

Documented information (e.g., work products) is reviewed, established and released.
AND
Process activities are planned, monitored and adjusted against objectives
AND
Requirements for the documented information are defined.

According to ASPICE version 4, which software verification process capability level (CL) is characterized by a combination of the above statements?

a) Capability level 0
b) Capability level 1
c) Capability level 2
d) Capability level 3

Select ONE option.

## Question #7 (1 Point)

Imagine you are participating in an ASPICE – Assessment in your role as Test Manager and you are receiving the information that your test process has been assessed as “L”, using the process attribute PA 1.1.

Which ONE of the following options is correct?

a) “L” not fulfilled
b) “L” partly fulfilled
c) “L” largely fulfilled
d) “L” fully fulfilled

Select ONE option.

## Question #8 (1 Point)

Which of the following statements about regression criteria is TRUE, according to ASPICE?

a) The regression testing criteria define the test level specific test environments, and which tests are to be executed in which test environments
b) The regression testing criteria define the selection of appropriate test cases for regression testing, including a set of test cases selected as a base set to be executed
c) The regression testing criteria typically define the test approach independent from the test level for the selection of regression tests
d) The regression testing criteria are an abstract description of the planned test levels and how to proceed within those test levels. They are valid for an organization or program, for one or more projects

Select ONE option.

## Question #9 (1 Point)

What traceability requirements are referenced in ASPICE?

a) Traceability of the tester working hours to the executed test cases
b) Traceability of the specified test cases to the verification test results
c) Traceability of interface description to the specified maintainability tests
d) Traceability of the customer requirements to the specified integration tests

Select ONE option.

## Question #10 (1 Point)

You are the test manager for a Tier 1 supplier, and you are responsible for defining the verification measures according to ASPICE Software engineering process group (SWE.4). The components (units) to be verified are both safety-related (up to ASIL-B) and non-safety.

According to the process requirements of the Original Equipment Manufacturers (OEM), the supplier should confirm tor Industry Software Reliability Association (MISRA) compliance and adhere to the functional safety guidelines.

Which of the following is INAPPLICABLE as a verification measure?

a) Dynamic black-box testing of the components to achieve 100% requirements coverage for safety relevant components
b) Tool-supported measurement of branch coverage of the tested components, to ensure 100% plausibility of the test results
c) Tool-supported static analysis to achieve MISRA compliance with the component source code
d) Code reviews to verify the comprehensibility, and correctness of component source code

Select ONE option.

## Question #11 (1 Point)

Which statement BEST describes the contribution of a Certified Automotive Software Tester to the safety culture?

a) The tester ensures that all project team members contribute to the safety culture
b) The tester verifies that all processes required for functional safety activities are implemented
c) The tester contributes to the development phases of the safety lifecycle
d) The tester carries out all activities that are related to functional safety

Select ONE option.

## Question #12 (1 Point)

Which of the following statements regarding automotive safety integrity level (ASIL) is TRUE?

a) The ASIL of a hazard is the result of the hazard analysis and risk assessment
b) ASIL A represents the highest criticality, ASIL D represents the lowest one
c) An ASIL is assigned to all classified hazards
d) ASIL stands for “automotive security integrity level”

Select ONE option.

## Question #13 (1 Point)

Which two parts of ISO 26262 are the MOST IMPORTANT ones for the Certified Automotive Software Tester?

a) Part 4 (Product development at the system level) and part 6 (Product development at the software level)
b) Part 3 (Concept phase) and part 6 (Product development at the software level)
c) Part 2 (Management of functional safety) and part 6 (Product development at the software level)
d) Part 5 (Product development at the hardware level) and part 6 (Product development at the software level)

Select ONE option.

## Question #14 (1 Point)

Which of the following statements regarding safety aspects is TRUE?

a) For the development of automotive Electric/Electronic (E/E) systems, ISO 26262 describes requirements to ensure functional safety
b) Functional safety and cybersecurity of automotive E/E systems contradict each other
c) Functional safety of an automotive E/E system can be assumed if unreasonable risks for people during the normal operation of this system can be avoided
d) For the development of automotive E/E systems, ISO 26262 describes requirements to ensure cybersecurity

Select ONE option.

## Question #15 (1 Point)

Which of the following statements BEST describes the contribution of a Certified Automotive Software Tester in the safety lifecycle?

a) The tester performs functional safety tests primarily during the product development phase
b) The tester performs functional safety tests primarily during the concept phase
c) The tester performs functional safety tests equally during all phases of the safety lifecycle
d) The tester performs functional safety tests primarily during the post-release phase while in production

Select ONE option.

## Question #16 (1 Point)

ISO 26262 recommends the use of specific test techniques and test types depending on the Automotive Safety Integrity Level (ASIL).

Which statement is TRUE?

a) For safety requirements with a higher ASIL require more extensive testing than safety requirements with a lower ASIL because the number of recommended test techniques and test types is higher
b) For safety requirements with a higher ASIL, more extensive testing is required than for safety requirements with a lower ASIL, as the recommended test techniques and test types lead to more test cases
c) For safety requirements with a higher ASIL, a more extensive testing in comparison to safety requirements with a lower ASIL often occurs, as the number of recommended test techniques and test types doubles with each ASIL
d) For safety requirements with a higher ASIL, more extensive testing in comparison to safety requirements with a lower ASIL often occurs, as more extensive and detailed test techniques and test types are recommended and may lead to more test cases.

Select ONE option.

## Question #17 (1 Point)

The following table shows an ISO 26262 methods table regarding code coverage metrics.

| | | ASIL | | | |
|---|---|---|---|---|---|
| **Methods** | | **A** | **B** | **C** | **D** |
| 1a | Statement coverage | ++ | ++ | + | + |
| 1b | Branch coverage | + | ++ | ++ | ++ |
| 1c | Modified condition/decision coverage (MC/DC) | + | + | + | ++ |

Which of the following decisions documented in the test plan is consistent with the above methods table?

a) For ASIL A, branch coverage is used, and statement coverage is not used, as 100% branch coverage implies 100% statement coverage
b) For ASIL B, statement coverage is used, and branch coverage is not used, as statement coverage is positioned higher in the table and is therefore more important
c) For ASIL D, MC/DC is used as it is the only possible option
d) For ASIL B, statement coverage is used, and branch coverage is not used, as 100% statement coverage implies 100% branch coverage

Select ONE option.

## Question #18 (1 Point)

Which of the following statements regarding Automotive Open System Architecture (AUTOSAR) is TRUE?

a) AUTOSAR defines a closed architecture that only can be used by the companies that are members of the AUTOSAR consortium
b) AUTOSAR is not compliant with international standards
c) AUTOSAR supports communication only between AUTOSAR control units
d) AUTOSAR supports different domains

Select ONE option.

## Question #19 (1 Point)

Which of the following statements regarding AUTOSAR is TRUE?

a) The integration test of the AUTOSAR software components (SW-Cs) cannot be implemented in a virtual test environment because real hardware is required
b) The runtime environment (RTE) can be used as an infrastructure for testing AUTOSAR SW-Cs
c) The AUTOSAR acceptance testing must be performed to prove the AUTOSAR conformity of the software
d) AUTOSAR-specific tests are limited to the software of a single electronic control unit (ECU)

Select ONE option.

## Question #20 (1 Point)
Which of the following statements regarding the objectives of ASPICE and the ISO 26262 is NOT TRUE?

a) The objective of ASPICE is to evaluate the capability of the supplier´s development processes through the use of assessments
b) The objective of ISO 26262 is to evaluate the capability of the supplier´s development processes through the use of assessments
c) The objective of ISO 26262 is to avoid the risks of systematic failure during development by specifying suitable requirements and processes
d) The objective of ISO 26262 is to define requirements for the test processes and test techniques to be used by the tester in the development of E/E systems

Select ONE option.

## Question #21 (1 Point)
Which of the following statements is TRUE?

a) ASPICE defines the test techniques to be used for each test level
b) ISTQB® defines the test techniques to be used depending on the test level
c) ISO 26262 and ASPICE define method tables for all mentioned test levels
d) ISO 26262 method tables recommend test techniques depending on ASIL

Select ONE option.

## Question #22 (1 Point)
Which items are part of an automotive specific test environment?

a) Control computer, simulation software, data logger
b) Real-time capable computer, network accesses, report database
c) Measuring devices, specification documents, laboratory
d) Data management tool, operating system, environment model

Select ONE option.

## Question #23 (1 Point)
Which interfaces are used to collect and distribute information in an ECU?

a) Environment model, bus system and diagnostic interface
b) Analogue and digital inputs, sensor interface and communication interface
c) Analogue and digital inputs, supply voltage and diagnostic interface
d) Analogue and digital inputs, bus system and diagnostic interface

Select ONE option.

## Question #24 (1 Point)
Which of the statements is TRUE?

a) In a closed-loop system, the output signals of the test object are directly linked to the inputs of the test object
b) In a closed-loop system, the output signals of the test object are linked to the inputs of the test object via an environment model
c) In an open-loop system, the output signals of the test object are directly linked to the inputs of the test object
d) In an open-loop system, the output signals of the test object are linked to the inputs of the test object via an environment model

Select ONE option.

## Question #25 (1 Point)
Which of the following statements is NOT TRUE?

a) In the model-in-the-loop (MiL) test environment, the test object is human-readable
b) In the MiL test environment, the test object exists as a model
c) In the MiL test environment, additional hardware is required
d) A MiL test environment is used early in the development process

Select ONE option.

## Question #26 (1 Point)
Which of the following statements is NOT TRUE?

a) In the software-in-the-loop (SiL) test environment, additional hardware is required
b) In the SiL test environment, the test object exists as compiled object code
c) In the SiL test environment, a wrapper is required to control and monitor inputs and outputs
d) In the SiL test environment, the number of access points is limited by the wrapper

Select ONE option.

## Question #27 (1 Point)
Which tests are typically performed in a SiL test environment?

a) Tests of the response time for diagnostic requests
b) Tests for electromagnetic compatibility
c) Performance efficiency tests of the target hardware
d) Interface tests and integration tests

Select ONE option.

## Question #28 (1 Point)
Which three items are all parts of a hardware-in-the-loop (HiL) test environment?

a) Test case specification, bus simulation, power supply
b) Breakout box, software compiler, real parts
c) Power supply, real-time capable computer
d) Signal processing, processor simulation

Select ONE option.

## Question #29 (1 Point)
Which of the following test environment statements is TRUE?

a) For integration tests is only the HiL test environment suitable
b) For component tests, both a MiL test environment and SiL test environment are both suitable
c) For system tests, both a MiL and HiL test environment are both suitable
d) Any XiL test environment can be used at any test level

Select ONE option.

## Question #30 (1 Point)
Which of the following statements about MiL test environments is most likely TRUE?

a) The test execution time of the simulation depends on the complexity of the model and the computing power of the test system
b) Access to bus and diagnostic interfaces are implemented in the test environment
c) The test environment model provides extensive implementations of physical processes such as electromagnetic compatibility or cable break
d) The MiL test environment simulation can only be started and stopped. It is not possible to pause the simulation.

Select ONE option.

## Question #31 (1 Point)
Which test is typically performed at a component HiL test environment?

a) Test of the overall system requirements for the vehicle
b) Test of the driving behavior of the chassis
c) Test of the ECU functions for correct behavior
d) Test of the data exchange between the ECU

Select ONE option.

## Question #32 (1 Point)
Which statement is TRUE?

a) The cost of a defect in the test object is highest if the defect is found in the MiL test environment
b) A HiL test environment is a more realistic test environment than a SiL test environment
c) The amount of effort for design, commissioning and maintenance of a HiL test environment is lower than a SiL test environment
d) Hardware components are tested in a SiL test environment

Select ONE option.

## Question #33 (1 Point)
You are a member of a test team, and you are asked to test the code of an ECU. The ECU has been provided by the development team as a model and development board since ECU hardware is available yet. The test is supposed to ensure the mechanisms for defect detection and defect handling in the ECU work properly.

Which test environment should be used in this situation given the test types?

a) A HiL test environment, as defects for the test of the defect handling can only be simulated in this test environment
b) A SiL test environment, as development kits are available, and defect detection is to be tested
c) A MiL test environment, as no hardware is available yet and the test object is available as a model
d) If no ECU hardware is available, the software cannot be tested

Select ONE option.

## Question #34 (1 Point)
Which of the following statements about coding standards is TRUE?

a) A coding standard defines required testing activities (e.g. test techniques and testware)
b) A coding standard defines required test specification languages (e.g. test automation and test case selection)
c) A coding standard defines required development practices (e.g. commenting and naming conventions)
d) A coding standard defines required modelling techniques (e.g. states and state transitions)

Select ONE option.

## Question #35 (1 Point)

Which of the following statements regarding MISRA C:2025 is TRUE?

a) Rules of the category “required” must not be neglected by the developer, even if a reason is given
b) The binding character of guidelines is predefined for every organization
c) Rules of the category “mandatory” help to avoid typical coding anomalies
d) MISRA guidelines are fully testable by static analysis tools

Select ONE option.

## Question #36 (1 Point)

The requirements for a car radio on the system level are given below:

1. After switching it on, the system shows the message “welcome” for 3 seconds.
2. In a switched-on state, the radio is in one of the states “active”, “passive” or “in maintenance”, and in a switched-off state the last state is saved.
3. In a switched-on state the radio function is engaged by pressing the button “Radio”.
4. If the CD function is engaged and no CD is in the drive, the system displays the message “No Disc”.

Which of the following statements about the given quality criteria for requirements according to the ISO/IEC/IEEE 29148 standard is TRUE?

a) Requirement 1 is not verifiable
b) Requirement 2 is not singular
c) Requirement 3 is not consistent
d) Requirement 4 is not unambiguous

Select ONE option.

## Question #37 (1 Point)

Which of the following statements regarding requirements-based testing is CORRECT?

a) Requirements-based testing focuses only on the covering of requirements and do not allow the use of exploratory tests
b) Requirements-based testing is designed to test the requirements until they are consistent and complete
c) Requirements-based testing is designed to cover requirements with test cases
d) Requirements-based testing verifies the test object without considering the quality or clarity of the customer requirements.

Select ONE option.

## Question #38 (1 Point)

Which of the following statements is NOT a description of a fault injection test?

a) Fault injection tests inject faults into the behavior of external components to show that the system can handle faulty situations
b) Fault injection tests inject faults into internal interfaces, such as lost messages
c) Fault injection tests inject faults into system specifications, such as parameters that are too low for the required performance
d) Fault injection tests inject faults into the test object, which show up as internal defects

Select ONE option.

## Question #39 (1 Point)

A steer-by-wire system is being developed to ISO 26262 (ASIL D) and is currently undergoing system testing. The system specification describes each relevant input only as predefined categories (not numerical ranges), e.g.,

- Steering mode: COMFORT, SPORT, ECO
- Road surface: DRY, WET, SNOW
- Wheel position: FRONT_LEFT, FRONT_RIGHT, REAR_LEFT, REAR_RIGHT

Follow the recommendations in ISO 26262 and use only the information provided in this scenario.

Which test technique is MOST APPROPRIATE for the system test design?

a) Decision table testing
b) Boundary value analysis
c) Equivalence partitioning
d) Modified Condition/Decision testing

Select ONE option.

## Question #40 (1 Point)

Below is a decision with three single conditions (B1 AND B2) OR B3. The task for the tester is to design test cases according to modified condition/decision testing (MC/DC).

The tester has already designed three test cases:

1. B1 = TRUE, B2 = TRUE, B3 = FALSE
2. B1 = FALSE, B2 = TRUE, B3 = FALSE
3. B1 = FALSE, B2 = TRUE, B3 = TRUE

Which additional test case is required to achieve 100% Modified Condition/ Decision Coverage?

a) B1 = TRUE, B2 = FALSE, B3 = TRUE
b) B1 = TRUE, B2 = TRUE, B3 = TRUE
c) B1 = FALSE, B2 = FALSE, B3 = FALSE
d) B1 = TRUE, B2 = FALSE, B3 = FALSE

Select ONE option.