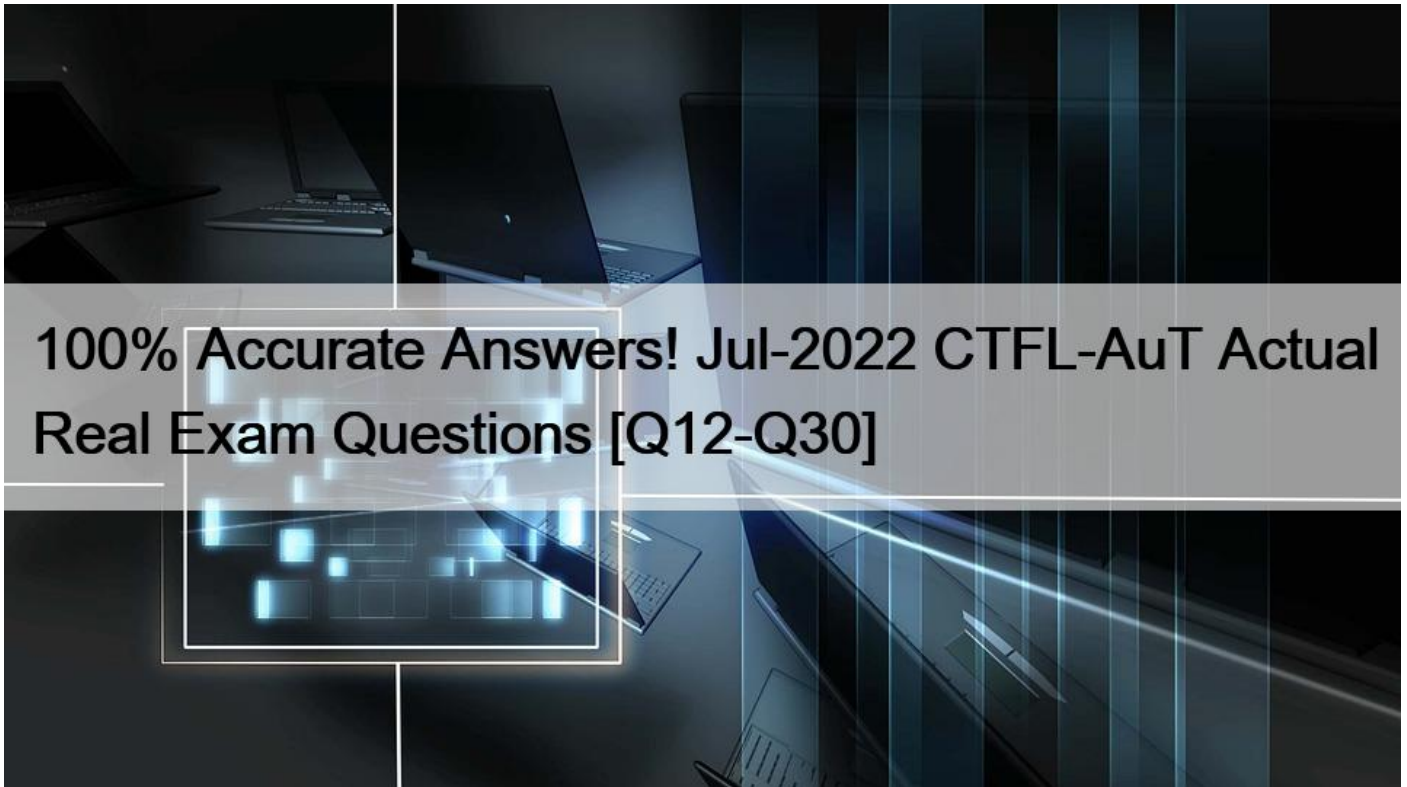


100% Accurate Answers! Jul-2022 CTFL-AuT Actual Real Exam Questions [Q12-Q30]



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ISQI CTFL-AuT Exam Syllabus Topics:

Topic 1- Classification of the XiL test environments (MiL, SiL, HiL) in the general V-model- The influence of criticality on the extent of the test (K2)
Topic 2- Differences between Closed-Loop and Open-Loop (K2)- Contribution of the tester to the safety culture
Topic 3- Context-dependent selection of test techniques (K3)- Objective of functional safety for E-E systems
Topic 4- Advantages and disadvantages of testing in the XiL test environments- Integration of the tester in the safety lifecycle (K2)
Topic 5- Influence of ASIL on test techniques, test types and the extent of the test- Process categories in the process dimension
Topic 6- Essential interfaces, databases and communication protocols of a electronic control unit (K1)- Requirements of the standard (K3)
Topic 7- Assessment levels and capability indicators- Project aspects influenced by standards (K1)

QUESTION 12

You are a tester in a learn and you are supposed to test diagnostic functions and bus communications on the CAN bus. The development team provides you with compiled software code and control unit hardware. Which test environment is the best choice considering the test types?

* A MiL test environment, as the compiled software code can be integrated cost efficiently into an environment model.

- * A Sal test environment, since the performance of the bus communication can be tested better in this test environment.
- * A hi test environment, as the bus communication with other participants can be tested close to reality
- * Diagnosis functions and bus communications can only be tested in the vehicle.

QUESTION 13

Which example describes a typical application of a closed-loop system?

- * Activating the hazard warning lights is to be tested To do so, the flashing lights are monitored and the flashing frequency is measured and assessed.
- * The setting of an error memory entry in the motor control unit is to be tested To do so, the motor temperature is increased above the critical limit and afterwards, the subsequent error memory entry will be read and assessed.
- * The correct reaction of the windscreen wiper is to be tested To do so, the ram sensor is activated by water on the screen and the windscreen wiping activities are monitored.
- * A cruise control is to be tested by reaching the target speed in a given time and holding this speed despite outside disturbances. Different driving scenarios are simulated for this.

QUESTION 14

Which statement regarding AUTOSAR is TRUE?

AUTOSAR describes

- * a collection of characteristics of the performance of processes of an organization.
- * an open and standardized software architecture for vehicle development.
- * an analysis unit, which processes input signals and determines intermediate values and their respective output signals by using existing information.
- * activities, methods and measures to achieve functional security for electric and electronic solutions.

Explanation

<https://www.pathpartnertech.com/software-architecture-autosar-for-automotive-embedded-system/>

QUESTION 15

Which statement regarding ISO 26262 is true?

- * According to the general opinion of experts in functional safety, ISO 26262 CANNOT be considered as a contribution to the state of science and technology regarding the functional safety of road vehicles.
- * ISO 26262 is part of Automotive SPICE. Therefore, conformity with ISO 26262 is checked as part of an Automotive SPICE-assessment to avoid the additional effort of a separate safety audit
- * ISO 26262 is a standard for functional safety. It is a domain-specific adaptation of IEC 61508 for the specific characteristics in the development of safety-relevant electric-electronic systems for motor vehicles.

D, ISO 26262 is a security standard; thus, information and work security are core topics of ISO 26262.

QUESTION 16

Which test documents are required according to Automotive SPICE?

- * Test procedure specification
- * Test management report
- * Test metrics report
- * Load testing report

QUESTION 17

Which statement regarding the operating conditions and comparison of test environments is true?

- * To test in a MIL test environment, a full system specification is necessary.
- * As tests for MIL and SIL take place closer to the test object, the test basis must have a higher degree of detail than in HIL.
- * The costs for debugging are higher for a Si test environment than for a MiL test environment.
- * The proximity to reality in a MiL test environment is higher than in a SI test environment.

QUESTION 18

Your company produces electric windows and corresponding control units. The newest control unit for electric windows has repeatedly been problematic, which you think results from issues in the requirements, in particular, you noticed the following requirements in your first review.

Which of the following requirements for the system test violates at least one of the quality criteria of the ISO/IEC/IEEE 29148:2011?

ID; 12. When the central lock is activated, then all windows are automatically closed.

ID; 37 Given: the ignition is activated. When the button for a window is pressed down, then the window moves down.

ID; 85: Given: the window moves up. When the window encounters resistance, then the window driving motor stops.

ID; 142; Given: a door is open. When the button for a window is pressed then the message M-85 is sent to the control unit.

- * The requirement 85 is not atomic.
- * The requirement 37 is inconsistent on system level.
- * The requirement 12 is ambiguous.
- * The requirement 142 is not verifiable on system level.

QUESTION 19

Which dimension is defined in Automotive SPICE?

- * Resource dimension
- * Capability dimension
- * Objective dimension
- * Time dimension

Explanation

In principle, automotive SPICE has two dimensions: the process dimension and the process capability dimension. The processes in the process dimension are based on the ISO 12207 that has been extended and modified with automotive-specific additions.

<https://industryforum.co.uk/resources/automotive-spice-by-vda/#:~:text=Scope%20of%20Automotive%20SPICE>

QUESTION 20

Which statement regarding the coding standard MISRA-C:2012 is true?

- * MISRA-C defines rules and guidelines. Rules are verifiable by static analysis tools and are always required.
- * MISRA-C defines rules and guidelines that are supposed to help avoid anomalies in object-oriented developed software (e.g. in C++).
- * MISRA-C defines rules that include among others that the source code should not include nested comments.

- * A typical rule in MISRA-C is that the developer has documented the implemented behavior.

QUESTION 21

Which statement regarding requirements-based testing is true?

- * Requirements-based testing can be combined with other test practices or testing techniques.
- * Requirements-based testing can solve issues like complete requirements
- * Only extensive and detailed requirements can be covered completely by the tester.
- * Requirements-based testing is a testing technique

QUESTION 22

Which statement regarding the contribution of the tester to a safety culture is true?

- * The tester performs the hazard analysis and the risk assessment for the product at the beginning of the project.
- * The tester always takes the overall context of the product development into account when she/he executes their tasks
- * In systems that could potentially lead to physical injury or damage to the health of people the tester analyses potential hazards.
- * The tester creates the hardware-software interface and provides this document to the safety manager

QUESTION 23

Which of the following statements regarding MIL test environments is true?

- * For a MIL test environment NO environmental model is necessary
- * In the MIL test environment, stimulations and observations are possible anywhere via access points.
- * In the MIL test environment, the test object is available as compiled code and it is not readable by a human being.
- * In the MIL test environment, additional hardware is necessary to implement access points.

QUESTION 24

Which constraints does a SiL test environment have?

- * Numerous internal signals of the test object can be stimulated or observed.
- * The test execution can be paused anytime for further analyses.
- * Electric error scenarios can be tested early.
- * In the SiL environment the simulation time is generally shorter than the real time.

QUESTION 25

Which statement regarding the objective of ASPICE and ISO 26262 is true?

- * To determine the capability of the product development process, ISO 26262 defines assessable requirements for these processes independently from the criticality. For the development of E/E systems.

ASPICE defines requirements for the processes and methods to be used by the tester depending on the ASIL.

- * For the development of EE systems, ISO 26262 defines requirements for the processes and methods to be used by the tester depending on the ASIL. To determine the capability of the product development process, ASPICE defines assessable requirements for these processes, independently from the criticality
- * For the development of E/E systems, ISO 26262 defines requirements for the processes and methods to be used by the tester independently from the ASIL. To determine the capability of the product development process, ASPICE defines assessable requirements for those processes depending on the criticality.
- * To determine the capability of the product development process, ISO 26262 defines requirements for the processes and methods to be used by the tester depending on the ASIL. For the development of E/E systems, ASPICE defines assessable requirements for the processes, independently from the criticality.

QUESTION 26

Which statement regarding the influence of the ASIL on test techniques, test types and test depths is true?

- * Depending on the determined ASIL, ISO 26262 recommends the execution of different test design techniques and test types, it differentiates between five different degrees of recommendation: e.g not at all suitable (0), recommended (1), etc.
- * As the ASIL is a characteristic of the overall product, it ONLY influences the test of the Item in combination with the other items of the vehicle
- * Depending on the determined ASIL, ISO 26262 recommends the execution of different test design techniques and test types. Given this, the standard for higher ASILs usually recommends more extensive and detailed measures.
- * With ASIL A, the tester can choose the test design techniques and the test types freely. For ASIL B, C and D, ISO 26262 recommends the execution of different measures or combinations of measures

QUESTION 27

Which statement regarding the test levels in a test environment is true?

- * For integration tests SiL, MiL and HiL test environments are suitable
- * For load and stress tests, MiL and HiL test environments are suitable
- * The correct classification of the test levels has no direct influence on the safety relevance of the test object (with regard to ISO 26262).
- * For component tests, St and MiL test environments are suitable

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