

ISTQB CT-AI

**ISTQB ARTIFICIAL INTELLIGENCE TESTER CERTIFICATION
QUESTIONS & ANSWERS**

Exam Summary – Syllabus – Questions

CT-AI

ISTQB Certified Tester AI Testing (CT-AI)

40 Questions Exam – 65% Cut Score – Duration of 60 minutes

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Know Your CT-AI Certification Well:

The CT-AI is best suitable for candidates who want to gain knowledge in the ISTQB Specialist. Before you start your CT-AI preparation you may struggle to get all the crucial Artificial Intelligence Tester materials like CT-AI syllabus, sample questions, study guide.

But don't worry the CT-AI PDF is here to help you prepare in a stress free manner.

The PDF is a combination of all your queries like-

- What is in the CT-AI syllabus?
- How many questions are there in the CT-AI exam?
- Which Practice test would help me to pass the CT-AI exam at the first attempt?

Passing the CT-AI exam makes you ISTQB Certified Tester AI Testing (CT-AI). Having the Artificial Intelligence Tester certification opens multiple opportunities for you. You can grab a new job, get a higher salary or simply get recognition within your current organization.

ISTQB CT-AI Artificial Intelligence Tester Certification Details:

Exam Name	ISTQB Certified Tester AI Testing
Exam Code	CT-AI
Exam Fee	USD \$199
Exam Duration	60 Minutes
Number of Questions	40
Passing Score	65 %
Format	Multiple Choice Questions
Schedule Exam	Pearson VUE
Sample Questions	ISTQB Artificial Intelligence Tester Exam Sample Questions and Answers
Practice Exam	ISTQB Certified Tester AI Testing (CT-AI) Practice Test

CT-AI Syllabus:

Topic	Details
Introduction to AI	
Definition of AI and AI Effect	- Describe the AI effect and show how it influences the definition of AI.
Narrow, General and Super AI	- Distinguish between narrow AI, general AI, and super AI.
AI-Based and Conventional Systems.	- Differentiate between AI-based systems and conventional systems.
AI Technologies	- Recognize the different technologies used to implement AI.
AI Development Frameworks	- Identify popular AI development frameworks.
Hardware for AI-Based Systems	- Compare the choices available for hardware to implement AI-based systems.
AI as a Service (AIaaS)	- Explain the concept of AI as a Service (AIaaS).
Pre-Trained Models	- Explain the use of pre-trained AI models and the risks associated with them.
Standards, Regulations and AI	- Describe how standards apply to AI-based systems.
Quality Characteristics for AI-Based Systems	
Flexibility and Adaptability	- Explain the importance of flexibility and adaptability as characteristics of AI-based systems.
Autonomy	- Explain the relationship between autonomy and AI-based systems.
Evolution	- Explain the importance of managing evolution for AI-based systems.
Bias	- Describe the different causes and types of bias found in AI-based systems.
Ethics	- Discuss the ethical principles that should be respected in the development, deployment and use of AI-based systems.
Side Effects and Reward Hacking	- Explain the occurrence of side effects and reward hacking in AI-based systems.

Topic	Details
Transparency, Interpretability and Explainability	- Explain how transparency, interpretability and explainability apply to AI-based systems.
Safety and AI	- Recall the characteristics that make it difficult to use AI-based systems in safety-related applications.
Machine Learning (ML)	
Forms of ML	- Describe classification and regression as part of supervised learning. - Describe clustering and association as part of unsupervised learning. - Describe reinforcement learning.
ML Workflow	- Summarize the workflow used to create an ML system.
Selecting an ML Approach	- Given a project scenario, identify an appropriate ML approach (from classification, regression, clustering, association, or reinforcement learning).
Factors involved in ML Algorithm Selection	- Explain the factors involved in the selection of ML algorithms.
Overfitting and Underfitting	- Summarize the concepts of underfitting and overfitting. - Demonstrate underfitting and overfitting.
ML - Data	
Data Preparation as part of the ML Workflow	- Describe the activities and challenges related to data preparation. - Perform data preparation in support of the creation of an ML model.
Training, Validation and Test Datasets in the ML Workflow	- Contrast the use of training, validation and test datasets in the development of an ML model. - Identify training and test datasets and create an ML model.
Dataset Quality Issues	- Describe typical dataset quality issues.
Data quality and its effect on the ML model	- Recognize how poor data quality can cause problems with the resultant ML model.
Data Labelling for Supervised Learning	- Recall the different approaches to the labelling of data in datasets for supervised learning. - Recall reasons for the data in datasets being mislabelled.

Topic	Details
ML Functional Performance Metrics	
Confusion Matrix	- Calculate the ML functional performance metrics from a given set of confusion matrix data.
Additional ML Functional Performance Metrics for Classification, Regression and Clustering	- Contrast and compare the concepts behind the ML functional performance metrics for classification, regression and clustering methods.
Limitations of ML Functional Performance Metrics	- Summarize the limitations of using ML functional performance metrics to determine the quality of the ML system.
Selecting ML Functional Performance Metrics	- Select appropriate ML functional performance metrics and/or their values for a given ML model and scenario. - Evaluate the created ML model using selected ML functional performance metrics
Benchmark Suites for ML	- Explain the use of benchmark suites in the context of ML
ML - Neural Networks and Testing	
Neural Networks	- Explain the structure and function of a neural network including a DNN. - Experience the implementation of a perceptron.
Coverage Measures for Neural Networks	- Describe the different coverage measures for neural networks.
Testing AI-Based Systems Overview	
Specification of AI-Based Systems	- Explain how system specifications for AI-based systems can create challenges in testing.
Test Levels for AI-Based Systems	- Describe how AI-based systems are tested at each test level
Test Data for Testing AI-Based Systems	- Recall those factors associated with test data that can make testing AI-based systems difficult.
Testing for Automation Bias in AI-Based Systems	- Explain automation bias and how this affects testing.
Documenting an ML Model	- Describe the documentation of an AI component and understand how documentation supports the testing of AI-based systems.

Topic	Details
Testing for Concept Drift	- Explain the need for frequently testing the trained model to handle concept drift.
Selecting a Test Approach for an ML System	- For a given scenario determine a test approach to be followed when developing an ML system.
Testing AI-Specific Quality Characteristics	
Challenges Testing Self-Learning Systems	- Explain the challenges in testing created by the self-learning of AI-based systems.
Testing Autonomous AI-Based Systems	- Describe how autonomous AI-based systems are tested
Testing for Algorithmic, Sample and Inappropriate Bias	- Explain how to test for bias in an AI-based system.
Challenges Testing Probabilistic and Non-Deterministic AI-Based Systems	- Explain the challenges in testing created by the probabilistic and non-deterministic nature of AI-based systems.
Challenges Testing Complex AI-based Systems	- Explain the challenges in testing created by the complexity of AI-based systems.
Testing the Transparency, Interpretability and Explainability of AI-based Systems	- Describe how the transparency, interpretability and explainability of AI-based systems can be tested. - Use a tool to show how explainability can be used by testers
Test Oracles for AI-Based Systems	- Explain the challenges in creating test oracles resulting from the specific characteristics of AI-based systems.
Test Objectives and Acceptance Criteria	- Select appropriate test objectives and acceptance criteria for the AI-specific quality characteristics of a given AI-based system.
Methods and Techniques for the Testing of AI-Based Systems	
Adversarial Attacks and Data Poisoning	- Explain how the testing of ML systems can help prevent adversarial attacks and data poisoning.
Pairwise Testing	- Explain how pairwise testing is used for AI-based systems. - Apply pairwise testing to derive and execute test cases for an AI-based system.

Topic	Details
Back-to-Back Testing	- Explain how back-to-back testing is used for AI-based systems.
A/B Testing	- Explain how A/B testing is applied to the testing of AI-based systems.
Metamorphic Testing	- Apply metamorphic testing for the testing of AI-based systems. - Apply metamorphic testing to derive test cases for a given scenario and execute them.
Experience-Based Testing of AI-Based Systems	- Explain how experience-based testing can be applied to the testing of AI-based systems. - Apply exploratory testing to an AI-based system.
Selecting Test Techniques for AI-Based Systems	- For a given scenario, select appropriate test techniques when testing an AI-based system.
Test Environments for AI-Based Systems	
Test Environments for AI-Based Systems	- Describe the main factors that differentiate the test environments for AI-based systems from those required for conventional systems.
Virtual Test Environments for Testing AI-Based Systems	- Describe the benefits provided by virtual test environments in the testing of AI-based systems.
Using AI for Testing	
AI Technologies for Testing	- Categorize the AI technologies used in software testing. - Discuss, using examples, those activities in testing where AI is less likely to be used.
Using AI to Analyze Reported Defects	- Explain how AI can assist in supporting the analysis of new defects.
Using AI for Test Case Generation	- Explain how AI can assist in test case generation.
Using AI for the Optimization of Regression Test Suites	- Explain how AI can assist in optimization of regression test suites
Using AI for Defect Prediction	- Explain how AI can assist in defect prediction. - Implement a simple AI-based defect prediction system.
Using AI for Testing User Interfaces	- Explain the use of AI in testing user interfaces

ISTQB CT-AI Sample Questions:

Question: 1

Why would the accuracy of human decisions be considered in testing as well as the accuracy of AI-based systems?

- a) Intuitive human decisions can be made faster than a corresponding AI-based system in some situations
- b) Unethical decisions can be made by humans as well as AI-based systems
- c) The accuracy of human decisions is not relevant to testing AI-based systems
- d) Human decisions may be of lower quality when they have been recommended by an AI-based system

Answer: d

Question: 2

When performing testing of a trained model, an ML engineer found that the model was highly accurate when evaluated with validation data but that it performed poorly with independent test data.

Which of the following options is MOST likely to cause this situation?

- a) Underfitting
- b) Concept drift
- c) Overfitting
- d) Poor acceptance criteria

Answer: c

Question: 3

DataSure is a start-up with a product that promises to improve the quality of ML models. DataSure claim that this improvement comes from checking if the data has been labeled correctly.

Which of the following defects is MOST likely to have been prevented by using this product?

- a) The model will have security vulnerabilities
- b) The model will not fulfill its intended function
- c) The model will have poor accuracy
- d) The model will produce biased outputs

Answer: c

Question: 4

System testing of an AI-based system is being planned. It has been suggested that exploratory testing is used in addition to scripted test techniques.

Which of the following scenarios is MOST likely to be an example of exploratory testing being performed?

- a) Training data is visualized using tools to look at various aspects of the data
- b) Tests written using equivalence partitioning during the previous test cycle are being run
- c) The Google 'ML test checklist' is being used
- d) ML functional performance metrics are being calculated

Answer: a

Question: 5

A test manager decides to have a non-AI system with similar functionality to the AI based system under test (SUT) built to support system testing.

Which of the following statements is most likely to be CORRECT?

- a) The test manager has chosen back-to-back testing because it helps solve the test oracle problem by using a pseudo-oracle
- b) The test manager has chosen A/B testing because it helps solve the test oracle problem by using a pseudo-oracle
- c) The test manager has chosen back-to-back testing because the non-functional requirements of the SUT can be verified against the pseudo-oracle
- d) The test manager has chosen A/B testing because the non-functional requirements of the SUT can be verified against the pseudo-oracle

Answer: a

Question: 6

An ML engineer is trying to find exploitable inputs and then use these inputs to retrain the models to make them immune to these inputs.

Which of the following options BEST describes the approach being used by the ML engineer?

- a) Validation
- b) Adversarial testing
- c) Data pipeline testing
- d) Scalability testing

Answer: b

Question: 7

The data scientist has complained that the model cannot be trained with one particular algorithm, although other algorithms work with the same training data.

Which of the following options is the MOST likely reason for this?

- a) Wrong data
- b) Missing data
- c) Insufficient data
- d) Badly labelled data

Answer: c

Question: 8

Which of the following characteristics of an example AI-based system might cause a test oracle problem?

- a) The output of the system is a prediction for which the ground truth is unknown
- b) It is not known where the training data was obtained
- c) The system runs with no human intervention and is considered to be autonomous
- d) There is a lack of transparency into how the system was implemented

Answer: b

Question: 9

Which of the following statements is CORRECT with respect to visual testing?

- a) Visual testing makes use of object IDs to determine changes
- b) Visual testing uses images to do pixel-by-pixel comparisons
- c) Visual testing helps find overlapping user interface elements
- d) Visual testing fails when the screen layout changes

Answer: a

Question: 10

In which of the following situations would AI be MOST useful when categorizing new defects?

- a) A large number of defects is reported on a small application
- b) A small number of defects requires categorization on a new application
- c) Minimal data is provided in typical defect reports
- d) A new development team needs to know the most appropriate developer to fix a defect

Answer: a

Study Guide to Crack ISTQB Artificial Intelligence Tester CT-AI Exam:

- Getting details of the CT-AI syllabus, is the first step of a study plan. This pdf is going to be of ultimate help. Completion of the syllabus is must to pass the CT-AI exam.
- Making a schedule is vital. A structured method of preparation leads to success. A candidate must plan his schedule and follow it rigorously to attain success.
- Joining the ISTQB provided training for CT-AI exam could be of much help. If there is specific training for the exam, you can discover it from the link above.
- Read from the CT-AI sample questions to gain your idea about the actual exam questions. In this PDF useful sample questions are provided to make your exam preparation easy.
- Practicing on CT-AI practice tests is must. Continuous practice will make you an expert in all syllabus areas.

Reliable Online Practice Test for CT-AI Certification

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