Vendor: iSQI

Exam Code: CT-AI

Exam Name: ISTQB Certified Tester - AI Testing

Version: DEMO

QUESTION 1
Which ONE of the following options BEST DESCRIBES clustering?

A. Clustering is classification of a continuous quantity.
B. Clustering is supervised learning.
C. Clustering is done without prior knowledge of output classes.
D. Clustering requires you to know the classes.

Answer: C
Explanation:
Clustering is a type of machine learning technique used to group similar data points into clusters. It is a key concept in unsupervised learning, where the algorithm tries to find patterns or groupings in data without prior knowledge of output classes.
In clustering, the algorithm groups data points into clusters without any prior knowledge of the classes. It discovers the inherent structure in the data.

QUESTION 2
Arihant Meditation is a startup using AI to aid people in deeper and better meditation based on analysis of various factors such as time and duration of the meditation, pulse and blood pressure, EEG patters etc. among others. Their model accuracy and other functional performance parameters have not yet reached their desired level.
Which ONE of the following factors is NOT a factor affecting the ML functional performance?

A. The data pipeline
B. The quality of the labeling
C. Biased data
D. The number of classes

Answer: D
Explanation:
Factors Affecting ML Functional Performance: The data pipeline, quality of the labeling, and biased data are all factors that significantly affect the performance of machine learning models. The number of classes, while relevant for the model structure, is not a direct factor affecting the performance metrics such as accuracy or bias.

QUESTION 3
Which ONE of the following options does NOT describe a challenge for acquiring test data in ML systems?

A. Compliance needs require proper care to be taken of input personal data.
B. Nature of data constantly changes with lime.
C. Data for the use case is being generated at a fast pace.
D. Test data being sourced from public sources.

Answer: C
Explanation:
Challenges for Acquiring Test Data in ML Systems: Compliance needs, the changing nature of data over time, and sourcing data from public sources are significant challenges. Data being generated quickly is generally not a challenge; it can actually be beneficial as it provides more data for training and testing.

QUESTION 4
Which ONE of the following hardware is MOST suitable for implementing AI when using ML?

A. 64-bit CPUs.
B. Hardware supporting fast matrix multiplication.
C. High powered CPUs.
D. Hardware supporting high precision floating point operations.

Answer: B
Explanation:
Matrix multiplication is a fundamental operation in many machine learning algorithms, especially in neural networks and deep learning. Hardware optimized for fast matrix multiplication, such as GPUs (Graphics Processing Units), is most suitable for implementing AI and ML because it can handle the parallel processing required for these operations efficiently.

QUESTION 5
Which ONE of the following statements is a CORRECT adversarial example in the context of machine learning systems that are working on image classifiers?

A. Black box attacks based on adversarial examples create an exact duplicate model of the original.
B. These attack examples cause a model to predict the correct class with slightly less accuracy even though they look like the original image.
C. These attacks can't be prevented by retraining the model with these examples augmented to the training data.
D. These examples are model specific and are not likely to cause another model trained on same task to fail.

Answer: D
Explanation:
Adversarial examples are often model-specific, meaning that they exploit the specific weaknesses of a particular model. While some adversarial examples might transfer between models, many are tailored to the specific model they were generated for and may not affect other models trained on the same task.

QUESTION 6
A company producing consumable goods wants to identify groups of people with similar tastes for the purpose of targeting different products for each group. You have to choose and apply an appropriate ML type for this problem.
Which ONE of the following options represents the BEST possible solution for this above-mentioned task?

A. Regression
B. Association
C. Clustering
D. Classification

Answer: C
Explanation:
Clustering is an unsupervised learning method used to group similar data points based on their features. It is ideal for identifying groups of people with similar tastes without prior knowledge of the group labels. This technique will help the company segment its customer base effectively.

QUESTION 7
Which ONE of the following is the BEST option to optimize the regression test selection and prevent the regression suite from growing large?

A. Identifying suitable tests by looking at the complexity of the test cases.
B. Using of a random subset of tests.
C. Automating test scripts using AI-based test automation tools.
D. Using an AI-based tool to optimize the regression test suite by analyzing past test results

Answer: D
Explanation:
This is the most effective approach as AI-based tools can analyze historical test data, identify patterns, and prioritize tests that are more likely to catch defects based on past results. This method ensures an optimized and manageable regression test suite by focusing on the most impactful test cases.

QUESTION 8
Pairwise testing can be used in the context of self-driving cars for controlling an explosion in the number of combinations of parameters.
Which ONE of the following options is LEAST likely to be a reason for this incredible growth of parameters?

A. Different Road Types
B. Different weather conditions
C. ML model metrics to evaluate the functional performance
D. Different features like ADAS, Lane Change Assistance etc.

Answer: C
Explanation:
While evaluating machine learning (ML) model performance is crucial, it does not directly contribute to the explosion of parameter combinations in the same way that road types, weather conditions, and car features do. Metrics are used to measure and assess performance but are not themselves variable conditions that the system must handle.

QUESTION 9
Which ONE of the following statements correctly describes the importance of flexibility for AI systems?

A. AI systems are inherently flexible.
B. AI systems require changing of operational environments; therefore, flexibility is required.
C. Flexible AI systems allow for easier modification of the system as a whole.
D. Self-learning systems are expected to deal with new situations without explicitly having to program for it.

Answer: C

QUESTION 10
Which ONE of the following options is the MOST APPROPRIATE stage of the ML workflow to set model and algorithm hyperparameters?

A. Evaluating the model
B. Deploying the model
C. Tuning the model
D. Data testing

Answer: C

QUESTION 11
Which ONE of the following tests is MOST likely to describe a useful test to help detect different kinds of biases in ML pipeline?

A. Testing the distribution shift in the training data for inappropriate bias.
B. Test the model during model evaluation for data bias.
C. Testing the data pipeline for any sources for algorithmic bias.
D. Check the input test data for potential sample bias.

Answer: B
Explanation:
This is a critical stage where the model is evaluated to detect any biases in the data it was trained on. It directly addresses potential data biases in the model.

QUESTION 12
Which ONE of the following models BEST describes a way to model defect prediction by looking at the history of bugs in modules by using code quality metrics of modules of historical versions as input?

A. Identifying the relationship between developers and the modules developed by them.
B. Search of similar code based on natural language processing.
C. Clustering of similar code modules to predict based on similarity.
D. Using a classification model to predict the presence of a defect by using code quality metrics as the input data.

Answer: D

QUESTION 13
Which ONE of the following options describes a scenario of A/B testing the LEAST?

A. A comparison of two different websites for the same company to observe from a user acceptance perspective.
B. A comparison of two different offers in a recommendation system to decide on the more effective offer for same users.
C. A comparison of the performance of an ML system on two different input datasets.
D. A comparison of the performance of two different ML implementations on the same input data.

Answer: C
Explanation:
Option C describes comparing the performance of an ML system on two different input datasets. This scenario focuses on the input data variation rather than the comparison of system versions or features, which is the essence of A/B testing. A/B testing typically involves a controlled experiment with two versions being tested under the same conditions, not different datasets.

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