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Module 4 Quiz

Latest Submission Grade 88%

1. What are the ACID properties? **1 / 1 point**

- ○ Atomicity, Congruency, Isolation, and Durability
- ○ Atomicity, Consistency, Isolation, and Duration
- ◉ Atomicity, Consistency, Isolation, and Durability
- ○ Atomicity, Consistency, Idempotent, and Durability

Correct
Yes! Taken together, these properties guarantee data validity despite any errors or mishaps.

2. Which of the following are true statements about data warehouses? **1 / 1 point**

- ☐ They have a high degree of flexibility
- ☑ They use closed protocols and proprietary software

Correct
Many data warehouses use closed protocols and proprietary software rather than open source standards

- [x] They provide the structure needed for BI applications

Correct
Repeated BI applications like reports are one of the primary focuses of data warehouses

- [ ] They enable machine learning workloads

3. Which of these features does Delta Lake support? (Select all that apply.) **0.8 / 1 point**

- [ ] Space Travel
- [x] Delete

Correct
Delete unwanted records.

- [ ] Cluster Creation
- [ ] Time Travel
- [x] Schema Evolution

Correct
Allow the schema to evolve over time.

You didn't select all the correct answers

4. Which of the following are true statements about data lakes? **1 / 1 point**

- [ ] They provide the structure needed for BI applications

- [ ] They use closed protocols and proprietary software
- [x] They enable machine learning workloads

Correct
Data lakes support a wide variety of datasets used in machine learning

- [x] They have a high degree of flexibility

Correct
Data lakes are flexible given that they allow for most file types and any schema

5. Which of the following are valid data models? **0 / 1 point**

- [x] Relational

Correct
Relational models use normalization to organize data in a database

- [x] Non-relational

Correct
Non-relational models allow for flexible storage of items such as documents

- [x] Query-oriented

Correct
Query-oriented modeling optimizes for the speed of queries

- [x] Star

Correct
Star schemas organize data into fact and dimension tables

- [ ] Medallion

You didn't select all the correct answers

6. What are the benefits a lakehouse architecture provides? **1 / 1 point**

- ○ Combine scalability and low-cost storage of data warehouses with the speed and ACID transactional guarantees of data lakes
- ◉ Combine scalability and low-cost storage of data lakes with the speed and ACID transactional guarantees of data warehouses
- ○ Combine scalability and ACID transactional guarantees of data lakes with the speed and low-cost storage of data warehouses
- ○ Combine speed and low-cost storage of data lakes with the scalability and ACID transactional guarantees of data warehouses

Correct
With a lakehouse, you're able to get the best of both worlds.

7. Machine learning is suited to solve which of the following tasks? (Select all that apply.) **1 / 1 point**

- [ ] Reporting
- [x] A/B Testing

Correct
Machine learning optimizes between different versions of websites or emails.

- [x] Image Recognition

Correct

Neural networks are effective for operating on image data.

- [x] Fraud Detection

Correct
Web traffic data can be used to predict fraudulent transaction.

- [x] Churn Analysis

Correct
Churn analysis predicts customer engagement.

- [x] Natural Language Processing

Correct
Natural Language Processing applies statistical methods to language.

- [x] Financial Forecasting

Correct
Time series analyses are commonly applied to financial data.

8. What is Machine Learning? (Select all that apply.) **1 / 1 point**

- [ ] Hand-coded logic
- [x] Learning patterns in your data without being explicitly programmed

Correct
Machine learning uses linear algebra and calculus to learn patterns in data without being explicitly programmed.

- [ ] Statistical moments calculated against a dataset
- [x] A function that maps features to an output

Correct
Machine learning maps input features to an output.

9. (Fill in the blanks with the appropriate answer below.) **1 / 1 point**

Predicting whether a website user is fraudulent or not is an example of _____ machine learning. It is a _____ task.

- ○ unsupervised, regression
- ◉ supervised, classification
- ○ unsupervised, classification
- ○ supervised, regression

Correct
In this case, whether the user is fraudulent is the dependent variable and we are classifying fraudulent from non-fraudulent users.

10. Linear regression is one algorithm used for machine learning. What is this algorithm learning? **1 / 1 point**

- ◉ It learns the line of best fit through the data
- ○ It learns the average of the label you're trying to predict
- ○ It learns the median of the label you're trying to predict
- ○ It learns the most similar other datapoints in that dataset to the ones you provide

Correct

Linear regression learns the line that best fits the relationship between input features and the label