1

Question: What is machine learning?

A) The study of algorithms that enable computers to learn from data.

B) The study of statistical models that enable computers to make predictions.

C) The study of algorithms and statistical models that enable computers to learn from and make predictions or decisions based on data.

D) The study of computer programs that can learn from experience.

Correct Answer: C

2

Question: Which of the following is NOT a type of machine learning algorithm?

A) Supervised Learning

B) Unsupervised Learning

C) Reinforcement Learning

D) Procedural Learning

Correct Answer: D

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Question: Clustering is a type of:

A) Supervised learning

B) Unsupervised learning

C) Reinforcement learning

D) Both supervised and unsupervised learning

Correct Answer: B

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Question: Which clustering method divides data into non-hierarchical groups and is often centroid-based?

A) Hierarchical Clustering

B) Density-Based Clustering

C) Distribution Model-Based Clustering

D) Partitioning Clustering

Correct Answer: D

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Question: The K-Means algorithm is an example of which type of clustering?

A) Hierarchical Clustering

B) Density-Based Clustering

C) Partitioning Clustering

D) Fuzzy Clustering

Correct Answer: C

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Question: K-Modes clustering is specifically designed for:

A) Numerical data

B) Textual data

C) Categorical data

D) Image data

Correct Answer: C

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Question: The Hamming distance is used to measure dissimilarity in which clustering algorithm?

A) K-Means

B) K-Modes

C) EM algorithm

D) Hierarchical clustering

Correct Answer: B

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Question: What does the "E" in the Expectation-Maximization (EM) algorithm stand for?

A) Estimation

B) Expectation

C) Evaluation

D) Enhancement

Correct Answer: B

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Question: Which algorithm uses Gaussian Mixture Models (GMMs)?

A) K-Means

B) K-Modes

C) Expectation-Maximization

D) Self-Organizing Map

Correct Answer: C

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Question: Principal Component Analysis (PCA) is primarily used for:

A) Feature scaling

B) Dimensionality reduction

C) Data visualization

D) Classification

Correct Answer: B