

DLMDSML01 1887
EXAMID: 1273337

On multiple choice questions there is exact one right answer. Please check the right answer. You are permitted to check only one answer. If you check more than one correct answer you will get 0 points. If you check the right answer you will get maximal points. Exam note cross must be set correctly.

QUESTION 1 OF 18

Marked out of 3.00

Which of the following is required by K-means clustering?

Answer option 1: defined distance metric

Answer option 2: number of clusters

Select one:

- ☐ Both Answer option 1 and Answer option 2 are correct.
- ☐ Neither Answer option 1 nor Answer option 2 is correct.
- ☐ Only answer option 1 is correct.
- ☐ Only answer option 2 is correct.

QUESTION 2 OF 18

Marked out of 3.00

Generally, which of the following method(s) is used for predicting continuous dependent variables?

Answer option 1: Linear Regression

Answer option 2: Logistic Regression

Select one:

- ☐ Neither Answer option 1 nor Answer option 2 is correct.
- ☐ Both Answer option 1 and Answer option 2 are correct.
- ☐ Answer option 1 only
- ☐ Answer option 2 only

QUESTION 3 OF 18

Marked out of 3.00

Which of the following indicates a fairly strong relationship between X and Y?

Select one:

- ☐ Correlation coefficient = 0.3
- ☐ Correlation coefficient = 0.9
- ☐ Correlation coefficient = 0.1
- ☐ The training is finalized after few iterations.

QUESTION 4 OF 18

Marked out of 3.00

Which of the following is correct for the Support Vector Machine learning model?

Answer option 1: Only data vectors defining the margins are called the support vectors.

Answer option 2: SVM can only classify linearly separable data.

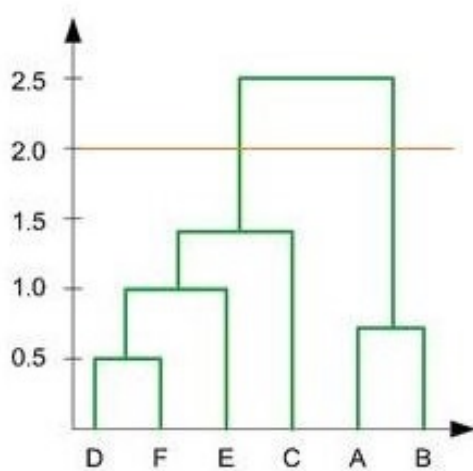
Select one:

- ☐ Only answer option 1 is correct.
- ☐ Answer option 1 and answer option 2 are both correct.
- ☐ Neither answer option 1 nor answer option 2 is correct.
- ☐ Only answer option 2 is correct.

QUESTION 5 OF 18

Marked out of 3.00

In the figure below, if you draw a horizontal line on y-axis for $y=2$.
What will be the number of clusters formed?



Select one:

- ☐ 1
- ☐ 3
- ☐ 2
- ☐ 4

QUESTION 6 OF 18

Marked out of 3.00

Classification problems fall under which category?

Select one:

- ☐ Supervised learning
- ☐ Reinforcement learning
- ☐ Cluster analysis
- ☐ Unsupervised learning

QUESTION 7 OF 18

Marked out of 3.00

... is a clustering procedure where all objects start out in one giant cluster. Clusters are formed by dividing this cluster into smaller and smaller clusters.

Select one:

- ☐ Agglomerative clustering
- ☐ Non-hierarchical clustering
- ☐ Divisive clustering
- ☐ K-Means clustering

QUESTION 8 OF 18

Marked out of 3.00

Which of the following is/are **not** true about DBSCAN clustering algorithm:

Answer option 1: For data points to be in a cluster, they must be in a distance threshold to a core point

Answer option 2: It has strong assumptions for the distribution of data points in dataspace

Select one:

- ☐ Answer option 1 and Answer option 2 are correct.
- ☐ Neither Answer option 1 nor Answer option 2 is correct.
- ☐ Answer option 2 only
- ☐ Answer option 1 only

QUESTION 9 OF 18

Marked out of 3.00

Which of the following is correct in decision tree learning?

Answer option 1: The Information gain is calculated for discrete values only, while the gain ratio rank can handle both discrete and continuous values.

Answer option 2: The measurement of the information gain of a specific feature is poor if this feature is completely homogenous.

Select one:

- ☐ Only answer option 2 is correct.
- ☐ Answer option 1 and answer option 2 are both correct.
- ☐ Only answer option 1 is correct.
- ☐ Neither answer option 1 nor answer option 2 is correct.

QUESTION 10 OF 18

Marked out of 3.00

What is correct about evolutionary computation?

Answer option 1: Approach to the design of learning algorithms that is structured along the lines of the theory of evolution.

Answer option 2: Decision support systems that contain an information base filled with the knowledge of an expert formulated in terms of if-then rules.

Select one:

- ☐ Answer option 1 and answer option 2 are both correct.
- ☐ Only answer option 2 is correct.
- ☐ Only answer option 1 is correct.
- ☐ Neither answer option 1 nor answer option 2 is correct.

QUESTION 11 OF 18

Marked out of 3.00

Genetic algorithms belong to the family of methods in which area?

Select one:

- ☐ Machine Learning and Optimization
- ☐ Complete enumeration methods
- ☐ Expert Systems
- ☐ Logical reasoning algorithms

QUESTION 12 OF 18

Marked out of 3.00

A ... regression can be employed to predict which grade a student will achieve in an exam based on hours of study, previous grades and other related factors.

Select one:

- ☐ Linear
- ☐ Multilinear
- ☐ Quantile
- ☐ Logistic

QUESTION 13 OF 18

Marked out of 3.00

Which approach of the following is applied to improve the prediction performance of decision trees?

Answer option 1: Bagging

Answer option 2: Boosting

Select one:

- ☐ Answer option 1 and answer option 2 are both correct.
- ☐ Neither answer option 1 nor answer option 2 is correct.
- ☐ Only answer option 1 is correct.
- ☐ Only answer option 2 is correct.

QUESTION 14 OF 18

Marked out of 3.00

Which of the following is correct for the simple Genetic Algorithm?

Answer option 1: Children compete with parents in survival selection.

Answer option 2: Both crossover and mutation are applied in each generation.

Select one:

- ☐ Only answer option 2 is correct.
- ☐ Neither answer option 1 nor answer option 2 is correct.
- ☐ Only answer option 1 is correct.
- ☐ Answer option 1 and answer option 2 are both correct.

Marked out of 6.00

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Marked out of 6.00

Marked out of 6.00

- What does a low Gamma value signify?
- What does a high Gamma value signify?

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Marked out of 18.00

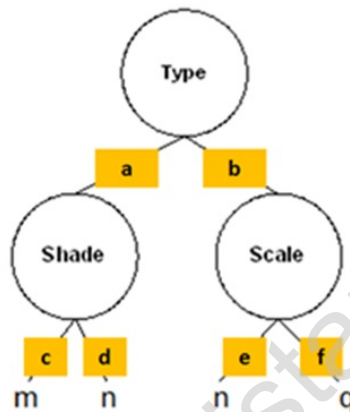
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QUESTION 18 OF 18

Marked out of 18.00

What are the values of a, b, c, d, e, and f in the following decision tree?

Scale	Type	Shade	Class
One	One	Light	m
Two	One	Light	m
Two	Two	Light	q
Two	Two	Dark	q
Two	One	Dark	n
One	One	Dark	n
One	Two	Light	n



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