Started on	Friday, April 7, 2023, 4:56 AM
State	Finished
Completed on	Friday, April 7, 2023, 5:19 AM
Time taken	22 mins 30 secs
Points	9.00/10.00
Grade	**90.00** out of 100.00

Question **1**

Correct

1.00 points out of 1.00

Logistic regression is an algorithm for

Select one:

- classification ✔
- regression analysis
- regularization
- standardization
- logical inference

Your answer is correct.

The correct answer is: classification

Question **2**

Correct

1.00 points out of 1.00

Regression using a random forest is often preferable to regression using a single decision tree because the former will usually

Select one:

- use less memory.
- produce a model that generalizes better. ✔
- run much faster.
- produce a more interpretable model.

Your answer is correct.

The correct answer is: produce a model that generalizes better.

Question 3

Incorrect

0.00 points out of 1.00

The Ordinary Least Squares method

Select one:

- finds the quadratic function that best explains the training data. ✖
- regularizes features based on variance.
- can only be used on classification tasks.
- is similar to the Adaline model but without the final step function.

Your answer is incorrect.

The correct answer is: is similar to the Adaline model but without the final step function.

Question 4

Correct

1.00 points out of 1.00

Symbolic regression produces

Select one:

- a confusion matrix labeled with the symbols TP, FP, TN, and FN.
- a RANSAC model.
- the flat hyperplane that best approximates the training data.
- a formula that may include any of the provided mathematical functions and constants. ✔
- an estimate of the coefficient of determination.

Your answer is correct.

The correct answer is: a formula that may include any of the provided mathematical functions and constants.

Question **5**

Correct

1.00 points out of 1.00

The "coefficient of determination" is commonly referred to as

Select one:

- MSE.
- λ.
- R^2. ✔
- CoD.
- entropy.

Your answer is correct.

The correct answer is: R^2.

Question **6**

Correct

1.00 points out of 1.00

If a regression model has an R^2 value of 1 for a dataset, this means that its predictions for the examples in that dataset are

Select one:

- worse, on average, than predicting the mean of the correct values.
- all overestimates of the correct values.
- all underestimates of the correct values.
- equivalent, on average, to predicting the mean of the correct values.
- all exactly correct. ✔

Your answer is correct.

The correct answer is: all exactly correct.

Question **7**

Correct

1.00 points out of 1.00

Polynomial regression

Select one:

- is an approximation to linear regression with polynomial run time.
- cannot be used with datasets that include negative target values.
- uses a cost function based on the sum of the nth powers of the errors, for $n > 2$, rather than the sum of the squares of the errors.
- is a form of linear regression using features that are polynomial combinations of the original features. ✔

Your answer is correct.

The correct answer is: is a form of linear regression using features that are polynomial combinations of the original features.

Question **8**

Correct

1.00 points out of 1.00

In multiple linear regression

Select one:

- more than one target may be predicted for each example.
- more than one feature may be used to predict the target. ✔
- grid search is always used to determine which linear regression model best fits the data.
- several regression models are used, with their results averaged to produce a prediction.
- models consist of collections of hyperplanes, each of which fits a subset of the data.

Your answer is correct.

The correct answer is: more than one feature may be used to predict the target.

Question **9**

Correct

1.00 points out of 1.00

To use a decision tree for regression rather than classification, one must use

Select one:

- higher tree depth limits.
- standardization to ensure that continuous feature values have the same means and standard deviations
- an impurity metric that is based on continuous error values, rather than class membership errors. ✔
- a measure of information gain based on Kolmogorov complexity.
- target values that are binned to create pseudo-classes.

Your answer is correct.

The correct answer is: an impurity metric that is based on continuous error values, rather than class membership errors.

Question **10**

Correct

1.00 points out of 1.00

Symbolic regression is generally performed using

Select one:

- support vector machines.
- a RANSAC model.
- ordinary least squares regression.
- random forests.
- an evolutionary algorithm. ✔

Your answer is correct.

The correct answer is: an evolutionary algorithm.

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