CS7641 ML Practice Quiz

Module SL 2: Regression and Classification

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Question 1

What is the primary focus of regression in the context of supervised learning?

A. Mapping continuous inputs to discrete outputs.
B. Mapping continuous inputs to continuous outputs.
C. Predicting outputs based on categorical inputs.
D. Fitting polynomial functions to data points.
E. Minimizing the error in unsupervised learning models.

Question 2

In the context of regression, what does the term "regression to the mean" imply?

A. A tendency for extreme values to move towards an average value in subsequent generations.
B. The process of returning to an earlier developmental state.
C. The mean value of a dataset is always the best estimate for new data points.
D. A statistical method for calculating the mean of a dataset.
E. The idea of reducing the dimensionality of a dataset.

Question 3

What role does the degree of a polynomial play in polynomial regression?

A. Higher degrees always lead to better model accuracy.
B. Lower degrees guarantee a better fit to data.
C. The degree determines the model's complexity and ability to fit data.
D. The degree is irrelevant in determining the model's performance.
E. Higher degrees always lead to overfitting.

Question 4

What is cross-validation primarily used for in the context of regression?

A. To eliminate all errors in the training set.
B. To ensure the model generalizes well to unseen data.
C. To guarantee perfect fits to the training data.
D. To assess the accuracy of classification models.
E. To increase the computational complexity of the model.

Question 5

Which factors contribute to the errors observed in regression models?

A. Sensor errors in data collection.
B. Transcription errors during data entry.
C. Errors due to unmodeled influences.
D. Errors caused by discrete data inputs.
E. Systematic errors inherent to the regression algorithm itself.

Answer Key

1. B
2. A
3. C
4. B
5. A, B, C