MACHINE LEARNING

In Q1 to Q11, only one option is correct, choose the correct option:

1. Which of the following methods do we use to find the best fit line for data in Linear Regression?
   A) Least Square Error

2. Which of the following statement is true about outliers in linear regression?
   A) Linear regression is sensitive to outliers

3. A line falls from left to right if a slope is_____?
   B) Negative

4. Which of the following will have symmetric relation between dependent variable and independent variable?
   B) Correlation

5. Which of the following is the reason for over fitting condition?
   C) Low bias and high variance

6. If output involves label then that model is called as:
   B) Predictive modal

7. Lasso and Ridge regression techniques belong to_____?
   D) Regularization

8. To overcome with imbalance dataset which technique can be used?
   D) SMOTE

9. The AUC Receiver Operator Characteristic (AUCROC) curve is an evaluation metric for binary classification problems. It uses to make graph?
   A) TPR and FPR

10. In AUC Receiver Operator Characteristic (AUCROC) curve for the better model area under the curve should be less.
    B) False

11. Pick the feature extraction from below:
    B) Apply PCA to project high dimensional data

In Q12, more than one options are correct, choose all the correct options:

12. Which of the following is true about Normal Equation used to compute the coefficient of the Linear Regression?
    A) We don't have to choose the learning rate.
    B) It becomes slow when number of features is very large.

MACHINE LEARNING

Q13 and Q15 are subjective answer type questions, Answer them briefly.

13. Explain the term regularization?

Regularization is a technique used to prevent overfitting in machine learning models by adding a penalty term to the loss function. This penalty term discourages the model from assigning too much importance to any one feature and helps to reduce the complexity of the model.

14. Which particular algorithms are used for regularization?

Some common algorithms that use regularization include Ridge Regression and Lasso Regression. These algorithms add an L2 or L1 penalty term, respectively, to the loss function.

15. Explain the term error present in linear regression equation?

In linear regression, the error term represents the difference between the observed value of the dependent variable and the value predicted by the model. The goal of linear regression is to minimize the sum of squared errors (SSE) between the observed and predicted values.