MACHINE LEARNING

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

Ans: A) Least Square Error

2. Which of the following statement is true about outliers in linear regression?

Ans: A) Linear regression is sensitive to outliers

3. A line falls from left to right if a slope is _____?

Ans: B) Negative

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

Ans: B) Correlation

5. Which of the following is the reason for over fitting condition?

Ans: C) Low bias and high variance

6. If output involves label then that model is called as:

Ans: B) Predictive model

7. Lasso and Ridge regression techniques belong to _____?

Ans: D) Regularization

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

Ans: D) SMOTE

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

Ans: A) TPR and FPR

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

Ans: A) True

11. Pick the feature extraction from below:

Ans: B) Apply PCA to project high dimensional data

12. Which of the following is true about Normal Equation used to compute the coefficient of the Linear Regression?

Ans: A) We don't have to choose the learning rate

B) It becomes slow when number of features is very large

D) It does not make use of dependent variable.

13. Explain the term regularization?

Ans: Regularization is a technique used to solve the overfitting problems in Machine Learning.

The model will have low accuracy if there is overfitting. There are two main regularization techniques, namely Ridge Regression (L2) , Lasso Regression (L1) & Elastic Net (L1+L2). There is a parameter α (alpha). This is called a tuning parameter that decides how much we want to penalize our model.

Ridge Regularization is also known as L2 regularization or ridge regression. It works by adding a penalty in the cost function, which is proportional to the sum of the squares of weights of each feature.

Lasso regularization, also known as L1 regularization or lasso regression, also works by minimizing the weights by including them as a penalty in the cost function. However, in lasso regression, the absolute weights are considered instead of the magnitude of the weights as in the case of ridge regression.

14. Which particular algorithms are used for regularization?

Ans: 1) Ridge Regression (L2)

2) Lasso Regression (L1)

3) Elastic Net (L1+L2)

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

Ans: Residual/Error = Actual values – Predicted Values

Mean Squared Error

Sum of Residuals/Errors = Sum(Actual- Predicted Values)

Square of Sum of Residuals/Errors = $(\text{Sum}(\text{Actual- Predicted Values}))^2$