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

A) Least Square Error B) Maximum Likelihood

C) Logarithmic Loss D) Both A and B

Ans. The correct answer is **A) Least Square Error**

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

A) Linear regression is sensitive to outliers B) linear regression is not sensitive to outliers

C) Can't say D) none of these

Ans. The correct answer is **A) Linear regression is sensitive to outliers**

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

A) Positive B) Negative

C) Zero D) Undefined

Ans. The correct answer is **B) Negative**

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

A) Regression B) Correlation

C) Both of them D) None of these

Ans. The correct answer is **B) Correlation**

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

A) High bias and high variance B) Low bias and low variance

C) Low bias and high variance D) none of these

Ans. The correct answer is **C) Low bias and high variance**

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

A) Descriptive model B) Predictive modal

C) Reinforcement learning D) All of the above

Ans. The correct answer is **B) Predictive modal**

7. Lasso and Ridge regression techniques belong to _____?

A) Cross validation B) Removing outliers

C) SMOTE D) Regularization

Ans. The correct answer is **D) Regularization**

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

A) Cross validation B) Regularization

C) Kernel D) SMOTE

Ans. The correct answer is **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 B) Sensitivity and precision

C) Sensitivity and Specificity D) Recall and precision

Ans. The correct answer is **A) TPR and FPR**

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

A) True B) False

Ans. The correct answer is **B) False**

11. Pick the feature extraction from below:

A) Construction bag of words from a email

B) Apply PCA to project high dimensional data

C) Removing stop words

D) Forward selection

Ans. The correct answer is **A) Construction bag of words from a email**

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.

C) We need to iterate.

D) It does not make use of dependent variable.

Ans. The correct answer is **A) We don't have to choose the learning rate and B) It becomes slow when number of features is very large.**

13. Explain the term regularization?

Ans. Regularization is a technique used in machine learning to prevent overfitting by adding extra information to the model1. Overfitting occurs when a model performs well on the training data but does not generalize well to new, unseen data. Regularization works by adding a penalty term to the cost function, which reduces the magnitude of the coefficients and decreases the complexity of the model1. This helps to improve the model's performance on new data and makes it more robust. There are several types of regularization techniques, including Ridge Regression and Lasso Regression

14. Which particular algorithms are used for regularization?

Ans. There are several algorithms that can be used for regularization in machine learning. Some of the most commonly used algorithms include Ridge Regression and Lasso Regression. These algorithms work by adding a penalty term to the cost function, which reduces the magnitude of the coefficients and decreases the complexity of the model. This helps to prevent overfitting and improve the model's performance on new data

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

Ans. In a linear regression equation, the error term represents the difference between the observed value of the dependent variable and the value predicted by the regression model1. This difference is also known as the residual2. The goal of linear regression is to minimize the sum of the squared errors, which is known as the mean squared error (MSE)1. The MSE is calculated by measuring the distance between the observed y-values and the predicted y-values at each value of x, squaring each of these distances, and then calculating the mean of all the squared distances