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

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

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

A) Positive

B) Negative

C) Zero

D) Undefined

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

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

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

7. Lasso and Ridge regression techniques belong to _____?

A) Cross validation

B) Removing outliers

C) SMOTE

D) Regularization

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

A) Cross validation

B) Regularization

C) Kernel

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

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

A) True

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

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.

13. Explain the term regularization?

Ans: Regularization is a process in which we try to overcome the overfitting problem. Some features don't contribute to predict the output or haven't strong relation with label, in that case our model get overfitted. To avoid this, regularization applies penalty on data or minimize the weights of that feature(importance of feature) by keeping them or can completely ignore the feature (features are not deleted in this process only the importance or magnitude were altered)

14. Which particular algorithms are used for regularization?

Ans: There are two algorithms to achieve regularization Lasso and Ridge. Lasso will completely ignore the those features which are not contributing or haven't good relation with label by giving zero importance to those features, but ridge will not completely ignore feature its minimize the magnitude only

Example:

We want to predict the salary of employees there are features experience, age, height, salary

So we know that height is having independent relation with salary, cause no mater how much your height is it will not going to effect your salary as experience ,skill will effect.

So here lasso will give zero importance to height feature (completely ignore)

Ridge will minimize the magnitude but not completely ignore

In case age also

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

Ans: Error Is a difference between actual value and predicted value.

Example: We are predicting students marks consider test data (some feature)(actual marks 90) and model predict the mark 80

So there is a difference called error in some cases it can go negative so we will square it avoid distance cancelling (like +2 -2 will result in 0 but it actually residual=4)

Rss= $\sum_{1}^{n}(y - predicted\ value)\text{^}2$

n=number of data points

y=actual value

predicted value =model predicted value