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 ✓ 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 ✓

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. ✓
    C) We need to iterate. ✓
    D) It does not make use of dependent variable.

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

13. Explain the term regularization? Not trained on

14. Which particular algorithms are used for regularization? Not trained on

15. Explain the term error present in linear regression equation? Ans: This is below equation we use in linear regression.

Y= a + bX + e

Where Y is an dependent output variable, X is an independent input variable. (b) is an coefficient value or slope value. (a) is an intercept value. And e is an error present. Error term is the sum of the squared difference between the actual output and predicted output (Y-Y^)square.

Output Y is depend on error For Example:- If student given an exam if he does less error getting higher marks and if he does high errors results low marks. Same is in Data set model of error are less then a+bX part is working well and getting well output. If errors are high it means data set is not well learned.