

Machine Learning-Assignment No-39

1. A) Least Square Error
2. A) Linear Regression is sensitive to outliers
3. B) Negative
4. B) Correlation
5. B) Low bias and high variance
6. D) All of the above
7. D) Regularization
8. D) SMOTE
9. A) TPR and FPR
10. B) False
11. B) Apply PCA to project high dimensional data
12. A) We don't have to choose the learning rate,
B) It becomes slow when number of features is very large

Subjective answers:

13.

Regularization refers to techniques that are used to calibrate machine learning models in order to minimize the adjusted loss function and prevent overfitting or underfitting. Using regularization, we can fit our machine learning model appropriately on a given test set and hence reduce the errors.

14.

Techniques of Regularization: Mainly, there are two types of regularization techniques, which are as follows,

- **Ridge Regression**
- **Lasso Regression**

Ridge Regression: It is one of the types in linear regression in which we introduce a small amount of bias, known as Ridge Regression Penalty, so that we can get better long-term predictions. In Statistics, it is known as the L-2 norm.

Lasso Regression: is another variant of the regularization technique used to reduce the complexity of the model. It stands for Least Absolute and Selection Operator.

Term Error in Linear Regression Equation:

The difference between the expected value at a particular time and the value that was observed. An error term is a term in a model regression equation that tallies up and accounts for the unexplained difference between the regression model reflects the actual relationship between the independent and dependent variable or variables. The error term can indicate either that the model can be improved, such as by adding in another independent variable that explains some or all the difference, or by randomness, meaning that the dependent and independent variable or variables are not correlated to any greater degree.

