MACHINE LEARNING_ ASSIGNMENT

1. D) Both A and B

2. A) Linear regression is sensitive to outliers

3. B) Negative

4. B) Correlation

5. C) Low bias and high variance

6. B) Predictive model

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.

13. Explain the term regularization?

Regularization is a technique used in machine learning to prevent overfitting by adding a penalty term to the loss function. It discourages the model from becoming too complex by constraining the magnitude of model parameters. This helps the model generalize better to unseen data.

14. Which particular algorithms are used for regularization?

Algorithms used for regularization:

The main regularization techniques are:

- L1 regularization (Lasso)

- L2 regularization (Ridge)

- Elastic Net (combination of L1 and L2)

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

In linear regression, the error term represents the difference between the predicted value and the actual observed value. It accounts for the variability in the dependent variable that cannot be explained by the independent variables in the model. The error term is assumed to be normally distributed with a mean of zero and constant variance.