Machine Learning

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 modal

7. D) Regularization

8. D) SMOTE

9. A) TPR and FPR

10. B) False

11. A) Construction bag of words from an email

12. B) It becomes slow when the number of features is very large.

    C) We need to iterate.

    D) It does not make use of the dependent variable.

13. **Explain the term regularization?**

- Regularization is a technique used in machine learning to prevent overfitting by adding a penalty term to the model's cost function. This penalty discourages overly complex models by penalizing large coefficients. It helps in finding a balance between fitting the training data well and generalizing to unseen data.

14. **Which particular algorithms are used for regularization?**

- Lasso Regression (L1 regularization) and Ridge Regression (L2 regularization) are commonly used algorithms for regularization in linear regression. Additionally, Elastic Net combines both L1 and L2 penalties.

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

- In linear regression, the error refers to the difference between the predicted values of the dependent variable and the actual observed values. It represents the discrepancy between the model's predictions and the ground truth. The goal of linear regression is to minimize this error, often measured as the sum of squared differences between predicted and actual values (Sum of Squared Residuals). This error is minimized using techniques like least squares regression to find the best-fitting line to the data.