**Machine Learning**

In Q1 to Q11, only one option is correct, choose the correct option:

1. (A) Least Square Error
2. (A) Linear regression is sensitive to outliners
3. (B) Negative
4. (B) Correlation
5. (D) None of these
6. (B) Predictive model
7. (D) Regularization
8. (D) SMOTE
9. (C) Sensitivity and Specificity
10. (B) False
11. (C) Removing Stop Words

In Q12, more than one option are correct, choose all the correct option:

1. Answer is A, B & D

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

1. Explain the term regularization?

**Answer:** Regularization is a technique which is used to reduce the errors by fitting the functions over sets and overfittings. Regularization is all about finding the perfect balance between the simple and too complicated, 'augmenting' the input data and forcing models to focus on significant factors for prediction, avoiding memorizing errors, and to ensuring the ability to predict the unseen satisfactorily. Also, we have two types of regularization techniques like Ridge and Lasso.

1. Which particular algorithms are used for regularization?

**Answer:** We have two types of regularization techniques like Ridge and Lasso.

* Ridge – Ridge regression is a method for analyzing data and shrinks the co-efficient in order to help the data in more complexity and multi-collinearity. Ridge regression is also known as L2 Regularization
* Lasso – Lasso regression is a method of analysis which performs in selecting and enhancing the accuracy of the data model. It also forces or convert some of the co-efficient to be equaling to zero when the parameter is large. Hence, to avoid overfitting. Lasso regression is also known as L1 Regularization.
* There is another type which is called as Net regression which combines both ridge and Lasso.

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

**Answer:** A linear regression main step is to find linear line and optimal values which intercepts and coefficients such as the error is minimum. Error is the difference between actual and predicted value and the main aim to reduce the difference in both.

In Linear regression we can use mean – square error (MSE) to calculate the error in the model. It is calculated by measuring the distance of observed y values and predicted y values at each x value. We can also square the values as well and calculating the mean of squaring values. (Sum of residuals/errors = Sum (Actual – Predicted value) a small formula which can be incorporated here.