Q1 - Q11

ANSWERS

1. A) Least Square Error
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)
10. B)
11. B)
12. A) & B)

Q13 - Q15

Q13-Answer

Regularizations:

Regularization is a technique in Machine Learning. This technique works with the aim of fitting a function on the given training set and to make sure to avoid any overfits. The case of overfitting can also be avoided by

Regularization is suppose to mean the same in Machine Learning as in real world, it would ensure that things are regularised or ordered.

Regularization works by tuning the functions, here it adds penalties in the error function this leads to data getting the data regularised in a more simpler manner. The error function is controlled by the penalty function, hence the coefficients won't take extreme values while giving data.

This technique is also called weight decay in neural networks. Where it reduces the number of errors encountered.

Q14-Answer

Algorithms used in Regularization:

- Ridge Regression
- LASSO(Least Absolute Shrinkage and Selection Operator) Regression
- Elastic-Net Regression

Ridge Regression

Ridge regression is a method for analysing data that suffer from multi-collinearity. It adds a penalty to the loss function that is equivalent to the square of the magnitude of the coefficients.

LASSO Regression

LASSO performs two functions- feature selection & regularisation to increase prediction accuracy of the model. LASSO adds penalty to function similar to magnitude of the coefficients.

Elastic-Net Regression

Elastic-Net regularises function, it linearly combines L1 and L2 penalties of the LASSO and Ridge methods.

Q15-Answer

Error in Linear Regression Equation

An error term is a residual variable produced by a statistical/mathematical models. The residual is created when the model does not represent completely the actual relationship between the independent variables and the dependent variables.Thus, the error term is the amount at which the equation may differ. Error term is also called as residual variable, which correctly represents the lack of goodness of fit.