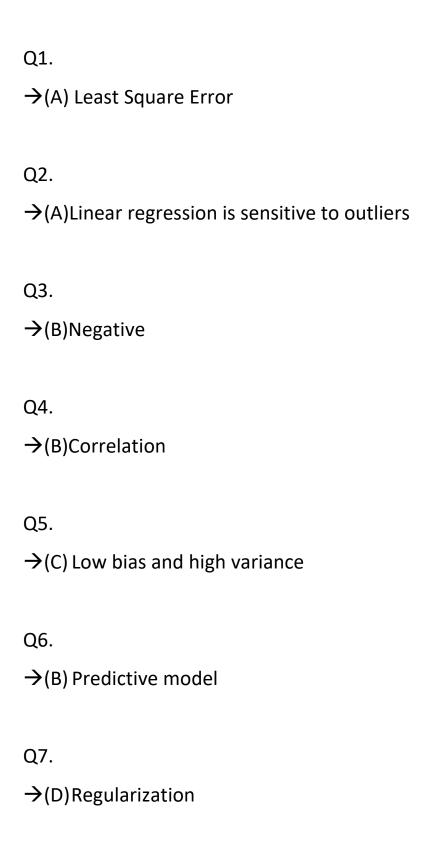
## Machine Learning Worksheet 1



Q8.
→(D)SMOTE
Q9.
→(A)TPR and FPR
Q10.
→(B)False
Q11.
→(B) Apply PCA to project high dimensional data
Q12.
→ (A)We don't have to choose the learning rate.
(B) It becomes slow when number of features is very large.
(C) We need to iterate.

## Q13.

→It normalizes and moderates weights attached to a feature or a neuron so that algorithms do not rely on just a few features or neurons to predict the result. This technique helps to avoid the problem of overfitting.

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## Q14.

- →There are three main regularization techniques, namely:
  - 1. Ridge Regression (L2 Norm)
  - 2. Lasso (L1 Norm)
  - 3. Dropout

Ridge and Lasso can be used for any algorithms involving weight parameters, including neural nets. Dropout is primarily used in any kind of neural networks e.g. ANN, DNN, CNN or RNN to moderate the learning.

## Q15.

→Error is the difference between the actual value and Predicted value and the goal is to reduce this difference

The vertical distance between the data point and the regression line is known as error or residual. Each data point has one residual and sum of all the differences is known as the Sum of Residuals/Errors.