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 (TPR and FPR)
10. B (False)
11. B (Apply PCA to project high dimensional data)
12. A,B (We don’t have to choose the learning rate. It becomes slow when number of features is very large.)
13. Regularization:

Regularization is any modification we make to a learning algorithm that is intended to reduce its generalization error avoiding overfitting and underfitting.

Example: We have trained our model/algorithm with the dataset we have but we can’t make the model fit/compatible with data other than dataset values.

1. Regularization Types:

LASSO Regression(L1 Norm)

Ridge Regression(L2 Norm)

Dropout

Elastic Net

LASSO : LASSO regression is regularization technique for performing linear regression, works well for feature selection. It shrinks coefficients to Zero. This penalizes the model based on the sum of magnitude of the coefficients

Ridge : Ridge regression is regularization technique for performing linear regression, works well for feature selection. It shrinks coefficients to Zero. This penalizes the model based on the sum of squares of magnitude of the coefficients

Dropout : Dropout is a regularization technique used in neural networks. It prevents complex co-adaptations from other neurons. It decreases overfitting by avoiding training all the neurons on the complete training data in one go. It also improves training speed and learns more robust internal functions that generalize better on unseen data.

Elastic Net: ElasticNet Regression is to find the coefficients that minimize the sum of error squares by applying a penalty to these coefficients. ElasticNet combines L1 and L2 (Lasso and Ridge) approaches.

1. Error : An error term is a residual variable produced by a statistical or mathematical model, which is created when the model does not fully represent the actual relationship between the independent variables and the dependent variables. An error term essentially means that the model is not completely accurate and results in differing results during real-world applications.

The error term is also known as the residual, disturbance, or remainder term, and is variously represented in models by the letters e, ε, or u.

Within a linear regression model tracking a stock’s price over time, the error term is the difference between the expected price at a particular time and the price that was actually observed. In instances where the price is exactly what was anticipated at a particular time, the price will fall on the trend line and the error term will be zero.

Points that do not fall directly on the trend line exhibit the fact that the dependent variable, in this case, the price, is influenced by more than just the independent variable, representing the passage of time. The error term stands for any influence being exerted on the price variable, such as changes in market sentiment.