Machine learning (solutions)

1. A)linear 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. D)recall and precision
10. B)false
11. B)apply PCA to project high dimensional data
12. A),B) & C)
13. Regularization refers to techniques that are used to calibrate machine learning models in order to minimize the adjusted loss function and prevent overfitting or under fitting.
14. There are three main types of regularization techniques: Ridge regularization and Lasso regularization and dropout.
    Ridge regularization, it modifies the over fitted or under fitted models by adding the penalty equivalent to the sum of the squares of the magnitude of coefficients.
    Lasso regularization, it modifies the over fitted or under fitted models by adding the penalty equivalent to the sum of the absolute values of coefficients.
    Dropout, is a regularization technique used in neural networks. It prevents complex co adaptations from other neurons.
15. Within a linear regression model tracking are stocks price overtime, the term error is the difference between the expected price at a particular time and the price that was actually observed. To calculate:
    1. Measuring the distance of the observed y-values from the predicted y- values at each value of x.
    2. Squaring each of these distances;
    3. Calculating the mean of each of the squared distances.