WORKSHEET 6 MACHINE LEARNING

Q1 ANS: C

Q2 ANS: B

Q3 ANS: C

Q4 ANS: B

Q5 ANS: B

Q6 ANS: A, D

Q7 ANS: B, C

Q8 ANS: A, C

Q9 ANS: A, B

Q10 ANS: The adjusted R squared compensates for the addition of variables and only increases if the new predictor enhances the model above what would be obtained by probability. Conversely, it will decrease when a predictor improves the model less than what is predicted by chance.

Q11 ANS: Ridge regression shrinks the coefficients for those predictors which contribute very less in the models but have huge weights, very close to zero, but it never makes them exactly zero, thus the final model will still contain all those predictors, though with less weights. This doesn't help in interpreting the model very well. This is where lasso regression differs with ridge regression. In lasso, the L1 penalty does reduce some coefficients exactly to zero when we use a sufficiently larger tuning parameter. So in addition to the regularizing, lasso also performs feature selection.

Lasso regression penalizes the model based on the sum of magnitude of the coefficients whereas ridge regression penalizes the model bases on the sum of squares of magnitude of the coefficients.

Q12 ANS: VIF(Variance Inflation Factor) is a measure of the amount of multicollinearity in a set of multiple regression variables. VIF detects multicollinearity in regression analysis. Multicollinearity is when there is correlation between features in a model. Its presence can adversely affect your regression results.
If the value of a VIF feature is less than 5 than it can be included in the regression modelling.

Q13 ANS: Without scaling the data of the features, the algorithm may be biased toward the feature with values higher in magnitude. Hence we scale the data that brings every data of feature in same range and the model uses every feature wisely.

Q14 ANS: Mean Absolute Error(MAE), Mean Squared Error(MSE) and Root Mean Squared Error(RMSE).

Q15 ANS: Sensitivity or Recall: 0.8
Specificity: 0.96
Precision: 0.95
Accuracy: 0.88