MACHINE LEARNING

MCQ

ANSWER 1= A) Least Square Error
ANSWER 2= A) Linear regression is sensitive to outliers
ANSWER 3= B) Negative
ANSWER 4= B) Correlation
ANSWER 5= C) Low bias and high variance
ANSWER 6= B) Predictive modal
ANSWER 7= A) Cross validation
ANSWER 8= D) SMOTE
ANSWER 9= A) TPR and FPR
ANSWER 10=B) False
ANSWER 11=B) Apply PCA to project high dimensional data
ANSWER 12=A,B,AND C   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

SUBJECTIVE ANSWER 13 TO 15

ANSWER 13= Regularisation, meaning in the machine learning context, refers to
minimising or shrinking the coefficient estimates towards zero to avoid underfitting
or overfitting the machine learning model.
There are three main regularisation techniques: L2(Ridge) regularisation, L1(Lasso)
regularisation, and Dropout regularisation.

1) Ridge Regularization (L2 Regularization)
Ridge Regularization is also known as L2 regularisation or ridge regression. It works
by adding a penalty or complexity term in the cost function of the standard least
squares model.

2) Lasso Regularization (L1 Regularization)
Lasso regularisation, also known as L1 regularisation or lasso regression, also works
by minimising the weights by including them as a penalty in the cost function.

3) Dropout Regularisation
Besides ridge and lasso regression, there are other less popular regularisation
techniques, such as dropout regularisation. Dropout regularisation is used in neural
network and Elastic Net regularisation, and it combines the penalty function of L1
and L2 regularisation.

ANSWER 14=Regularization refers to a range of strategies for regularising learning from specific characteristics in classical algorithms or neurons in neural network algorithms.It normalises and moderates weights associated with a feature or a neuron so that algorithms aren't reliant on a small number of features or neurons to predict the outcome.

Ridge regression – Its purpose is to overcome problems such as data overfitting and multicollinearity in data. When there is considerable collinearity (the existence of near-linear connections among the independent variables) among the feature variables, a typical linear or polynomial regression model will fail.

ANSWER 15=The error term, also known as the residual, in a regression represents the difference between the observed value of the dependent variable and the predicted value of the dependent variable. It measures the unexplained variation in the dependent variable that is not accounted for by the independent variables in the model. In other words, it represents the noise or randomness in the data that cannot be explained by the model.