Machine Learning Assignment

1.A

2.A

3.B

4.B

5.C

6.B

7.D

8.D

9.A

10.B

11.A

12.A and B

13.Regularization is the process which regularizes or shrinks the coefficients towards zero,thereby,reducing the errors by fitting the function appropriately on the given training set and avoiding overfitting.

14.The following algorithms are used in Regularization:

(i)Ridge Regularization

(ii)LASSO

Ridge Regularization: The Ridge regression technique is used to analyze the model where the variables may be having multicollinearity. It reduces the insignificant independent variables though it does not remove them completely. This type of regularization uses the L2 norm for regularization.

LASSO Regularization: Least Absolute Shrinkage and Selection Operator (or LASSO) Regression penalizes the coefficients to the extent that it becomes zero. It eliminates the insignificant independent variables. This regularization technique uses the L1 norm for regularization.

15. As per the Linear Regression equation as shown below:

$y = \beta 0 + \beta 1x + \varepsilon$

The error term is used to account for the variability in y that cannot be explained by the linear relationship between x and y. If ε were not present, that would mean that knowing x would provide enough information to determine the value of y.