Machine Learning

Q.1) a

Q.2) a

Q.3) b

Q.4) b

Q.5) c

Q.6) b

Q.7) d

Q.8) a

Q.9) a

Q.10) b

Q.11) b

Q.12) a,b,c

Q.13) Regularization:

Regularization is a technique used to reduce the errors by fitting the function appropriately on the given training set and avoid overfitting or underfitting. It is a technique used to make things regular or acceptable. Regularization is a technique used in regression to reduce the complexity of the model and to shrink the coefficients of the independent features. It converts a complex model into a simpler one,

so as to avoid the risk of overfitting and shrinks the coefficients, for lesser computational cost.

Q.14) Algorithms Used for Regularization:-

Ridge(L2) Regularization: It is also known as Ridge Regression. 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. The regularization parameter regularizes the coefficients such that if the coefficients take large values, the loss function is penalized. It is a method for analyzing data that suffer from multi-collinearity.

Lasso(L1) Regularization: Lasso stands for Least Absolute Shrinkage and Selection Operator. It is also known as Lasso regression. It performs both feature selection and regularization in order to enhance the prediction accuracy of the model. It modifies the overfitted or underfitted models by adding the penalty equivalent to the sum of the absolute values of coefficients. It also performs coefficient minimization, but instead of squaring the magnitudes of the coefficient, it takes the true value of coefficient. In this, the penalty has the effect of forcing some of the coefficient estimates to be exactly equal to zero when the regularization parameter is sufficiently large.

Elastic-Net Regression: It is a regularized regression method that linearly combines the L1 and L2 penalties of the LASSO and Ridge methods respectively.

Q.15) Error present in linear regression equation: It is the difference between what the model is predicting and the actual value. It represents the random factor. This error helps in the calculation of the R-squared value. It tells us how good the model is overall. If the R-squared value of the model is 0.8, then the model explains 80% of the variation in the given target.