13. Explain the term regularization?

Ans-regularisation is a technique used to reduce the error by fitting the function appropriately on the given training set and avoid overfitting.The commonly used regularisation technique are lasso regression,ridge regression.sometimes the model performs well with training data but does not perform well with the test data.IT means model is not able to predict the output when deals with unseen dataand hence the model is called overfitted. this problem can be deal with regularisation technique.This technique can be used in such a way that it will allow to maintain all variables in model by reducing the magnitude of the variable. hence it maintain accuracy .It mainly regularizes or reduce the coefficient of features towards zero.

14. Which particular algorithms are used for regularization?

Ans-There are three algorithms which are used

1)Ridge regression 2)lasso regression

Ridge regression is also called L2 regularization.It is used to reduce the complexity of the model .Ridge regression is a method for analyzing data that suffer from multi-collinearity.Ridge regression shrinks the coefficients as it helps to reduce the model complexity and multi-collinearity.

LASSO regression converts coefficients of less important features to zero, which indeed helps in feature selection, and it shrinks the coefficients of remaining features to reduce the model complexity, hence avoiding overfitting.

15. Explain the term error present in linear regression equation?

Ans- Error is the difference between the actual value and Predicted value and the goal is to reduce this difference.An error term essentially means that the model is not completely accurate and results in differing results during real-world applications. For example, assume there is a multiple linear regression function that takes the following

$Y=\alpha X+\beta\rho+\epsilon$

where:

α,β=Constant parameters

X,ρ=Independent variables

ϵ=Error term

When the actual Y differs from the expected or predicted Y in the model during an test, then the error term does not equal 0, which means there are other factors that influence Y.