

MACHINE LEARNING.

Answers

Q1. A) Least Square Error

Q2. A) Linear regression is sensitive to outliers

Q3.B) Negative

Q4. B) Correlation

Q5. C) Low bias and high variance

Q6. B) Predictive modal

Q7. D) Regularization

Q8. D) SMOTE

Q9. C) Sensitivity and Specificity

Q10. B) False

Q11. B) Apply PCA to project high dimensional data

Q12. 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.

Q.13. Regularization is a technique used in regression to reduce the complexity of the model and to shrink the coefficient of the independent features. Regularization refers to techniques that are used to calibrate machine learning models in order to minimize the adjusted loss function and prevent overfitting or underfitting.

Q.14. Regularization is a technique used in regression to reduce the complexity of the model and to shrink the coefficient of the

independent features. It converts a complex model into a simpler one, so as to avoid the risk of overwriting and shrinks the coefficient, for lesser computational cost.

Regularization algorithms are: Ridge Regression, LASSO Regression and Elastic-Net Regression.

1) **Ridge Regression:-** It is a method of analyzing data that suffer from multi-collinearity. It adds a L2 penalty to the loss function that is equivalent to the square of magnitude of the coefficients.

2) **LASSO Regression:-** It is a regression analysis method that performs both feature selection and regularization in order to enhance the prediction accuracy of the model. LASSO regression is also known as the L1 Regularization (L2 penalty).

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

Q.15. The error term in linear regression equation is the difference between the actual value and predicted value. In regression equation it represents the effect of the variables that were excluded from the equation.