

## **ASSIGNMENT – 10 MACHINE LEARNING**

In Q1 to Q8, only one option is correct, Choose the correct option:

1. In the linear regression equation  $y = \theta_0 + \theta_1 x$ ,  $\theta_0$  is the:  
Answer-A) Slope of the line
2. True or False: Linear Regression is a supervised learning algorithm.  
Answer-True
3. In regression analysis, the variable that is being predicted is:  
Answer-B) the dependent variable
4. Generally, which of the following method(s) is used for predicting continuous dependent variables?  
Answer-B) Linear Regression
5. The coefficient of determination is:  
Answer-A) ) the square root of the correlation coefficient
6. If the slope of the regression equation is positive, then:  
Answer-B) y increases as x increases
7. Linear Regression works best for:  
Answer-A) linear data
8. The coefficient of determination can be in the range of:  
Answer-A) 0 to 1

**In Q9 to Q13, more than one options are correct, Choose all the correct options:**

9. Which of the following evaluation metrics can be used for linear regression?  
Answer-B) RMSE  
D) MAE
10. Which of the following is true for linear regression?

Answer-A) Linear regression is a supervised learning algorithm.

B) Linear regression supports multi-collinearity.

11. Which of the following regularizations can be applied to linear regression?

Answer-A) Ridge

B) Lasso

D) Elastic Net

12. Linear regression performs better for:

Answer-C) Large number of features

D) The variables which are drawn independently, identically distributed

13. Which of the following assumptions are true for linear regression?

Answer-A) Linearity

B) Homoscedasticity

**Q14 and Q15 are subjective answer type questions, Answer them briefly.**

14. Explain Linear Regression?

Answer-Linear regression analysis is used to predict the value of a variable based on the value of another variable. The variable you want to predict is called the dependent variable. The variable you are using to predict the other variable's value is called the independent variable.

15. What is difference between simple linear and multiple linear regression?

Answer-Simple linear regression has only one x and one y variable.

Multiple linear regression has one  $y$  and two or more  $x$  variables.

For instance, when we predict rent based on square feet alone that is simple linear regression.