

Machine Learning

1. a
2. a
3. a
4. b
5. c
6. b
7. d
8. d
9. a
10. b
11. b
12. a, b & c

Subjective answer type questions:

13. Answer:

Regularization is one of the concepts of machine learning. It is a technique to avoid overfitting and used to reduce errors by fitting the function appropriately on the given training set. If the model is overfitted then this can be deal with the help of regularization. This will allow to maintain all variables in the model by reducing the magnitude. Hence, it maintains accuracy as well as generalization of the model. The techniques which are used mainly for regularization are;

- Ridge Regression
- Lasso Regression

14. Answer:

The Ridge Regression and Lasso Regression are the two particular algorithms used for regularization techniques.

Usage of Ridge Regression:

- When we have the independent variables which are having high collinearity between them, at that time general linear or polynomial regression will fail so to solve such problems, Ridge regression can be used.
- If we have more parameters than the samples, then Ridge regression helps to solve the problem.

Usage of Lasso Regression:

- Lasso Regression helps in reducing the problem of overfitting in the model as well as automatic feature selection.

15. Answer:

The linear regression equation is;

$$y = a + bx + e$$

Where,

y = output

a = intercept

b=coefficient
x=independent variable
e=error

Here, the term error gives the difference between actual value and predicted value. The error term 'e' is calculated using $\sqrt{(y - \hat{y})^2}$. An error term means that the model is not completely accurate and results in differing results during real world applications.