

-:MACHINE LEARNING ANSWER SHEET:-

- 1) D-Both A and B
- 2) A-Linear regression is sensitive to outliers.
- 3) B-Negative
- 4) B-Correlation
- 5) C-Low bias and high variance
- 6) B-Predictive modal
- 7) D-Regularization
- 8) D-SMOTE
- 9) A-TPR and FPR
- 10) B-False
- 11) All the options are correct.
- 12) A-We don't have to choose the learning rate.

B-It becomes slow when number of features is very large.

13) Regularization:- Regularization is a technique that acts as a mentor, guiding the model to learn effectively and avoid overfitting. It achieves this by penalizing the model for complexity. It like adding an extra hurdle during training, the model not only needs to fit the data well, but also do it without becoming overly complex of specific. There are 3 types of regularization 1-L1 Regularization, 2-L2 Regularization, 3-Elastic Net.

14) Following algorithms are used for regularization:-

- Linear Regression.
- Logistic Regression.
- Neural Networks.
- SVM

- Decision Trees.
- Ensemble Methods.

15) Term “error” present in linear regression:-

- In linear regression, the error term (also known as residual) represents the difference between the actual observed value of the dependent variable (y) and the value predicted by the model (\hat{y}). It's denoted as ϵ (epsilon).
- Here's the linear regression equation:
$$y = \beta_0 + \beta_1 x + \epsilon$$
 - > y =dependent variable
 - > β_0 =intercept (constant)
 - > β_1 =slope coefficient
 - > x =independent variable
 - > ϵ =error term