

FLIP ROBO TECHNOLOGIES WORK SHEET for MACHINE LEARNING

1st Set: Questions with single answers

Questions	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 Model
Q7	D) Regularization
Q8	D) SMOTE
Q9	A) TPR and FPR
Q10	B) False
Q11	A, B and C

2nd Set: Questions with multiple answers

Question 12:

Answer:

- A) We don't have to choose the learning rate
- B) It becomes slow when the number of features is very large

And, D) It does not make use of dependent variable.

3rd Set: Questions with Subjective answers

Question 13:

Answer: When we use regression models to train some data, there is a good chance that the model will overfit the given training data set. Regularization helps sort this overfitting problem by restricting the degrees of freedom of a given equation, i.e., simply reducing the number of degrees of a polynomial function by reducing their corresponding weights.

In a linear equation, we don't want huge weights/coefficients as a small change in weight can make a large difference for the dependent variable(Y). So, regularization constraints the weight of such features to avoid overfitting.

Question 14:

Answer: To regularize the model, a shrinkage penalty is added to the cost function. The different types of regularizations in regression:

- LASSO (L1 Norm)
- Ridge (L2 Norm)
- Elasticnet (Uses both LASSO and Ridge combined, however less used)

Question 15:

Answer: In Linear Regression, the error term is the deviation of the observed value from the true value of a quantity (example population mean), which is often misunderstood with residual, which is the difference between observed value and the estimated value of the same quantity. There are 3 types of error found and calculated in Linear Regression.

- a) Mean Absolute Error (MAE),
- b) Mean Squared Error (MSE), and,
- c) Root Mean Squared Error (RMSE)