PYTHON - WORKSHEET 1

Q1) Answer : (c) %

Q2) Answer : (b) 0

Q3) Answer : (c) 24

Q4) Answer : (a) 2

Q5) Answer : (d) 6

Q6) Answer : (c) the finally block will be executed no matter if the try block raises an error or not.

Q7) Answer : (a) It is used to raise an exception.

Q8) Answer : (c) in defining a generator.

Q9) Answer : (a) _abc (c) abc2

Q10) Answer : (a) yield (b) raise

MACHINE LEARNING

Q1) Answer : (a) Least Square Error

Q2) Answer : (a) Linear regression is sensitive to outliers

Q3) Answer : (b) Negative

Q4) Answer : (a) Regression

Q5) Answer : (c) Low bias and high variance

Q6) Answer : (b) Predictive Model

Q7) Answer : (d) Regularization

Q8) Answer : (d) SMOTE

Q9) Answer : (a) TPR and FPR

Q10) Answer : (b) False

Q11) Answer : (b) Apply PCA to project high dimensional data.

Q12) Answer : (a) We don’t have to choose the learning rate.

(d) It does not make use of dependent variable.

Q13) Answer :-

When we use regression models to train some data, there is a good chance that the model will overfit the given training dataset. Regularization helps sort this overfitting problem.

Regularization helps to reduce the variance of the model, without a substantial increase in the bias.

Q14) Answer :-

Two of the popular regression algorithms are :

1) Lasso Regression (Least Absolute Shrinkage and Selection Operator)

It penalizes the model based on the sum of magnitude of the coefficients.

2) Ridge Regression

It penalizes the model based on the sum of squares of magnitude of the coefficients.

Both Lasso and Ridge regularization are commonly used in linear regression models, and they can be extended to other machine learning algorithms as well. They are effective in preventing overfitting and improving the generalization performance of models.

Q15) Answer :-

The term ‘error’ refers to the difference between the actual observed values of the dependent variable and the values predicted by the linear regression model.

Mathematically, for a simple linear regression with one independent variable, the equation can be represented as:

$Y = \beta 0 + \beta 1X + \varepsilon$

where :

- Y is the dependent variable (the observed values).
- X is the independent variable.
- β0 is the y-intercept (the constant term).
- β1 is the slope of the line.
- ε represents the error term.