

## ASSIGNMENT – 39

### MACHINE LEARNING

In Q1 to Q11, only one option is correct, choose the correct option:

1. Which of the following methods do we use to find the best fit line for data in Linear Regression?

- A) Least Square Error B) Maximum Likelihood
- C) Logarithmic Loss D) Both A and B

Ans: D

2. Which of the following statement is true about outliers in linear regression?

- A) Linear regression is sensitive to outliers B) linear regression is not sensitive to outliers
- C) Can't say D) none of these

Ans: A

3. A line falls from left to right if a slope is \_\_\_\_\_?

- A) Positive B) Negative
- C) Zero D) Undefined

Ans: B

4. Which of the following will have symmetric relation between dependent variable and independent

variable?

- A) Regression B) Correlation
- C) Both of them D) None of these

Ans:B

5. Which of the following is the reason for over fitting condition?

- A) High bias and high variance B) Low bias and low variance
- C) Low bias and high variance D) none of these

Ans:C

6. If output involves label then that model is called as:

- A) Descriptive model B) Predictive modal
- C) Reinforcement learning D) All of the above

Ans:B

7. Lasso and Ridge regression techniques belong to \_\_\_\_\_?

- A) Cross validation B) Removing outliers
- C) SMOTE D) Regularization

Ans:A

8. To overcome with imbalance dataset which technique can be used?

- A) Cross validation B) Regularization
- C) Kernel D) SMOTE

Ans:D

9. The AUC Receiver Operator Characteristic (AUCROC) curve is an evaluation metric for binary

classification problems. It uses \_\_\_\_\_ to make graph?

- A) TPR and FPR B) Sensitivity and precision
- C) Sensitivity and Specificity D) Recall and precision

Ans:A

10. In AUC Receiver Operator Characteristic (AUCROC) curve for the better model area under the curve should be less.

- A) True B) False

Ans:A

11. Pick the feature extraction from below:

- A) Construction bag of words from a email
- B) Apply PCA to project high dimensional data
- C) Removing stop words
- D) Forward selection

Ans:B

In Q12, more than one options are correct, choose all the correct options:

12. Which of the following is true about Normal Equation used to compute the coefficient of the Linear

Regression?

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

C) We need to iterate.

D) It does not make use of dependent variable.

Ans:D

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### MACHINE LEARNING

Q13 and Q15 are subjective answer type questions, Answer them briefly.

13. Explain the term regularization?

14. Which particular algorithms are used for regularization?

15. Explain the term error present in linear regression equation?

Ans 14: in Machine learning there are three main regularization techniques, namely:

1. Ridge Regression(L2 Norm)
2. Lasso(L1 Norm)
3. Dropout

Ans13: Regularization is one of the most important concepts of machine learning. It is a technique to prevent the model from over fitting by adding extra information to it. Sometimes the machine learning model performs well with the training data but does not perform well with the test data.

Ans15: An error term represents the margin of error within a statistical model; it refers to the sum of the deviations within the regression line, which provides an explanation for the difference between the theoretical value of the model and actual observed results.

## WORKSHEET

### PYTHON – WORKSHEET 1

**Q1 to Q8 have only one correct answer. Choose the correct option to answer your question.**

1. Which of the following operators is used to calculate remainder in a division?

A) # B) &

C) % D) \$

Ans:C

2. In python 2//3 is equal to?

A) 0.666 B) 0

C) 1 D) 0.67

Ans:B

3. In python,  $6 \ll 2$  is equal to?

A) 36 B) 10

C) 24 D) 45

Ans:A

4. In python,  $6 \& 2$  will give which of the following as output?

A) 2 B) True

C) False D) 0

Ans:A

5. In python,  $6 | 2$  will give which of the following as output?

A) 2 B) 4

C) 0 D) 6

Ans:C

6. What does the finally keyword denotes in python?

A) It is used to mark the end of the code

- B) It encloses the lines of code which will be executed if any error occurs while executing the lines of code in the try block.
- C) the finally block will be executed no matter if the try block raises an error or not.
- D) None of the above

Ans:B

7. What does raise keyword is used for in python?

- A) It is used to raise an exception. B) It is used to define lambda function
- C) it's not a keyword in python. D) None of the above

Ans:A

8. Which of the following is a common use case of yield keyword in python?

- A) in defining an iterator B) while defining a lambda function
- C) in defining a generator D) in for loop.

Ans:C

**Q9 and Q10 have multiple correct answers. Choose all the correct options to answer your question.**

9. Which of the following are the valid variable names?

- A) \_abc B) labc
- C) abc2 D) None of the above

Ans:D

10. Which of the following are the keywords in python?

A) yield B) raise

C) look-in D) all of the above

Ans:A

**Q11 to Q15 are programming questions. Answer them in Jupyter Notebook.**

11. Write a python program to find the factorial of a number.

12. Write a python program to find whether a number is prime or composite.

13. Write a python program to check whether a given string is palindrome or not.

14. Write a Python program to get the third side of right-angled triangle from two given sides.

15. Write a python program to print the frequency of each of the characters present in a given string.