



Score: 68%

No. of questions: 10

Correct answer: 7

Incorrect answer: 3

Show incorrect attempt only ☐

### Question 1

1 Mark

Which of the following is true about r-squared?

- A On the addition of new features, r-squared always increases.
- B On the addition of new features, r-squared may increase or decrease.
- C On the addition of new features, r-squared either increases or remains the same but it never decreases.
- D On the addition of new features, r-squared always decreases.

**Correct Answer:** C. On the addition of new features, r-squared either increases or remains the same but it never decreases.

R-squared value will either increase or remain the same, it never decreases.



Number of observations in the data

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B

Number of features in the data

C

Number of classes in the dependent/target variable

D

None of the above



**Correct Answer:** C. Number of classes in the dependent/target variable

The dimension of a confusion matrix is equal to the number of classes in the target variable. Hence, option c is correct.

### Question 3

3 marks

Imagine, you are solving a classification problem with highly imbalanced class. The majority class is observed 99% of times in the training data. Your model has 99% accuracy after taking the predictions on test data. Which of the following is true in such a case?

A

Accuracy metric is not a good idea for imbalanced class problems

B

Accuracy metric is a good idea for imbalanced class problems

C

Precision and recall metrics are good for imbalanced class problems

D

Precision and recall metrics aren't good for imbalanced class problems

E

Both A and C



**Correct Answer:** E. Both A and C



In an imbalanced data set, accuracy should not be used as a measure of performance because 99% (given) might only be predicting majority class correctly, but our class of interest is minority class (1%). Hence, to evaluate model performance, we should use precision and recall to determine class-wise performance of the classifier.

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**Question 4**

1 Mark

Lesser the F1 score better will be the model.

A True

B False



**Correct Answer:** B. False

F1 score is a harmonic mean of precision and recall. The better the F1 score, the better the model will be. Hence, option b is correct.

**Question 5**

2 Marks

Imagine, you are working with “Analytics Vidhya” and you want to develop a machine learning algorithm which predicts the number of views on the articles. Your analysis is based on features like author name, the number of articles written by the same author on Analytics Vidhya in the past and a few other features. Which of the following evaluation metric would you choose in that case?

A Mean Squared Error



B Accuracy

C F1 score

D Both A and B

E Both B and C



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Correct Answer: A. Mean Squared Error

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You can think that the number of views of articles is the continuous target variable which falls under the regression problem. So, mean squared error will be used as an evaluation metrics.

### Question 6

3 marks

Adding a non-important feature to a linear regression model may result in:

A Increase in r-square



B Decrease in r-square

C Either increase or decrease in r-square

Correct Answer: A. Increase in r-square

On addition of a feature, the  $R^2$  would either increase or it will remain the same.

### Question 7

1 Mark

The value of the log loss evaluation metric can be negative.

A True

B False



Correct Answer: B. False

The log of any number (given the base is e) can never be negative and hence the value of log loss can never be negative.



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## Question 8


2 Marks

Which of the following statements is correct?

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A TPR should be greater than FPR 

B FPR should be greater than TPR

**Correct Answer:** A. TPR should be greater than FPR

The log of any number (given the base is e) can never be negative and hence the value of log loss can never be negative.

## Question 9


3 marks

Which evaluation metric takes into account the number of features from the dataset?

A RMSE

B R-squared


C Adjusted R-squared

D Both r-squared and adjusted r-squared 

**Correct Answer:** C. Adjusted R-squared

Only adjusted r-squared takes into account the number of features. RMSE and r-squared are not affected by the number of features.

## Question 10

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A feature F1 can take certain value: A, B, C, D, E, & F and represents a grade of students from a college. Which of the following statements is true in the following case?

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A  
≡

Feature F1 is an example of a nominal variable.

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B

Feature F1 is an example of an ordinal variable.



C

It doesn't belong to any of the above categories.

**Correct Answer:** B. Feature F1 is an example of an ordinal variable.

Ordinal variables are the variables which have some order in their categories. For example, grade A should be considered high grade than grade B.



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