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NPTEL (https://swayam.gov.in/explorer?ncCode=NPTEL) » Business analytics and data mining Modeling using R (course)

Week 6 : Assignment 6

The due date for submitting this assignment has passed.

Due on 2023-03-08, 23:59 IST.

Assignment submitted on 2023-03-07, 13:29 IST

1) Which of the following is correct about the below given statements? ***1 point***

Assertion (S): The value of adjusted R2 is always less than the value of R2

Reason (R): Adjusted R2 accounts for the number of predictors in multiple linear regression model

- (●) Both S and R are true and R is the correct explanation of S
- ( ) Both S and R are true but R is not the correct explanation of S
- ( ) S is true but R is false
- ( ) S is false but R is true

Yes, the answer is correct.
Score: 1

Accepted Answers:
Both S and R are true and R is the correct explanation of S

2) Which of the following is true about the best value of ‘k’ in kNN when working with data having complex and irregular structures? ***1 point***

- ( ) Value of ‘k’ should be on the higher side
- (●) Value of ‘k’ should be on the lower side
- ( ) Value of ‘k’ should be equal to the total number of observations in the dataset
- ( ) The value of ‘k’ has no impact

Yes, the answer is correct.

Score: 1
Accepted Answers:
Value of 'k' should be on the lower side

3) Which of the following statements is incorrect with respect to adjusted R-squared value? ***1 point***

- (●) Higher the number of predictors, higher the adjusted R-squared value
- ( ) Adjusted R-squared uses a penalty on the number of predictors
- ( ) Higher values of adjusted R-squares indicate better fit
- ( ) None of the above

Yes, the answer is correct.
Score: 1
Accepted Answers:
Higher the number of predictors, higher the adjusted R-squared value

4) Which of the following linear regression algorithms can be used for variable selection and dimension reduction? ***1 point***

- ( ) Exhaustive search
- ( ) Partial iterative search
- (●) Both A and B
- ( ) None of the above

Yes, the answer is correct.
Score: 1
Accepted Answers:
Both A and B

5) Which of the following partial iterative search algorithms start with the full model? ***1 point***

- ( ) Forward selection
- (●) Backward selection
- ( ) Exhaustive search
- ( ) Stepwise regression

Yes, the answer is correct.
Score: 1
Accepted Answers:
Backward selection

6) Which of the following algorithms overlooks the pairs or groups of predictors that perform well together but perform poorly as single predictors? ***1 point***

- (●) Forward selection
- ( ) Backward selection
- ( ) Exhaustive search
- ( ) None of the above

Yes, the answer is correct.

Text Transcripts ()

Score: 1
Accepted Answers:
Forward selection

7) What would be the Euclidean distance between the following data points with 4 predictors: ***1 point***
S (3,5,2,8) and T (1,4,6,2)

- 16.15
- 7.54
- 5
- 13

Yes, the answer is correct.
Score: 1
Accepted Answers:
7.54

8) Which of the following is highly likely when using a high value of k in k-NN technique? ***1 point***

- Fitting to local patterns
- Fitting to global patterns
- Fitting to noise
- None of the above

Yes, the answer is correct.
Score: 1
Accepted Answers:
Fitting to global patterns

9) Which of the following scenario is regarded as a naïve rule in k-NN? ***1 point***

- When k = 1
- When k > 1
- When k = n (where 'n' is the number of total observations)
- When 1 < k < n (where 'n' is the number of total observations)

Yes, the answer is correct.
Score: 1
Accepted Answers:
When k = n (where 'n' is the number of total observations)

10) Which of the following is true when k-NN is used for prediction tasks rather than classification tasks? ***1 point***

- Computation of distance between the new observation and training partition records is different
- Value of new record is determined using weighted average of all the k-nearest records
- Value of new record is determined using weighted average of the records belonging to the dominant class

Overall misclassification error is used as performance metric

Yes, the answer is correct.
Score: 1

Accepted Answers:
Value of new record is determined using weighted average of all the k-nearest records