DM-Spring-2020-Q3-Grade   92.31% (12/13)

✓ **1.** Logistic Regression Model is used to describe

(A) Relationship between one categorical dependent variable and one or more (any) explanatory variables

(B) Relationship between one numeric dependent variable and one or more (any) explanatory variables

(C) Relationship between one categorical dependent variable and one explanatory variable

(D) Relationship between one categorical dependent variable and one or more numeric explanatory variables

(E) I do not know

✓ **2.** Why Linear Regression cannot be used to predict the binary response variable?

(A) Some of the estimates might be outside the [0,1] interval

(B) Coefficients of linear regression models do not exist

(C) There will be the multicollinearity

(D) All of the variants

(E) I do not know

✓ **3.** The most common approach to estimate coefficients of logistic regression is

(A) The Maximum Likelihood

(B) Ordinary Least Squares

(C) Generalized Method of Moments

(D) I do not know

✓ **4.** The model of Logistic Regression is

(A) $\ln(lambda)=e^{(xb)}/(1+e^{(xb)})$

(B) $\ln(y)=e^{(xb)}/(1+e^{(xb)})$

(C) $\Pr(y=1)=e^{(xb)}/(1+e^{(xb)})$

(D) I do not know

5. We can estimate Logistic Regression in R using the function

A lm()

B glm()

C flm()

D logit()

E I do not know

6. Which one of these is the correct interpretation of the coefficient of Logistic Regression?

A For a 1-unit increase in X, we expect a b1 unit increase in Y.

B For a 1-unit increase in X, we expect b1 percentage increase in Y.

C For a 1-percentage increase in X, we expect b1 percentage increase in Y.

D Increasing X by one unit changes the log odds by b1

E I do not know

7. Logistic Regression cannot be used to model the response variable which

A has two categories

B has more than two categories

C is ordinal

D is numeric

E I do not know

8. Accuracy =

A (TP+TN)/Total

B TP/(TP+FN)

C TN/(TN+FP)

D I do not know

		Predicted	
		Negative (0)	Positive (1)
	Negative (0)	TN	FP
Actual	Positive (1)	FN	TP

9. Sensitivity =

A (TP+TN)/Total

B TP/(TP+FN)

C TN/(TN+FP)

D I do not know

		Predicted	
		Negative (0)	Positive (1)
	Negative (0)	TN	FP
Actual	Positive (1)	FN	TP

10. Your lecturer decided that you are cheating while you are not. It is

A Type 1 error (false positive)

B Type 2 error (false negative)

C I do not know

11. 1Suppose the data with the number of observations equals to 142, where 89 observations belong to class 1, and another part to 0. Let the level 1 is the positive case. We performed the logit model and obtained the accuracy = 60%. Does the model have a high predictive power?

A Yes, because it is more than the non-information rate

B No, because it is less than the non-information rate

C Yes, because it is less than the non-information rate

D No, as a result of other reasons.

E The non-information rate? What is it?

12. Is Logistic regression a supervised machine learning algorithm?

A Yes

B No

C I do not know

13. By using MLE for estimating the coefficient in the Logistic Regression model

A we can obtain the unique formula for coefficients

B we can obtain the unique formula for coefficients only for 1-D case

C we cannot obtain the unique formula for coefficients

D I do not know