DM-Spring-2020-Q5-Grade   68.75% (11/16)

1. In the multiple linear regression, we assume that...

A   The number of observations is much larger than the number of variables (n>>p)

B   The number of observations is slightly larger than the number of variables (n>p)

C   The number of observations equals than the number of variables (n=p)

D   The number of observations is lees than the number of variables (n<p)

E   It is not important

F   I do not know

2. The way of solving the problem of a large number of variables is...

A   Subset Selection & Shrinkage (Regularization)

B   Shrinkage (Regularization) & Maximum Likelihood estimation

C   Dimension Reduction & OLS estimation

D   I do not know

E   The absence of the right answer

3. The bias of an estimator (e.g. z^) equals

A $E(z$^$) - z$

B $E(z^2) - [E(z)]^2$

C $[E(z^2) - E(z)]^2$

D $E(z^2)$

E   I do not know

4. The main idea of regularization is

A   To introduce a small amount of bias in order to have less variance.

B   To introduce a small amount of variance in order to have less bias.

C   To introduce a small amount of variance and bias in order to have less bias.

D   I do not know

5. With which function we can show regularization in R

A glmnet()

B regular()

C lm()

D glm()

E I do not know

6. How the tune of any parametr can be made

A using Cross validation

B It is impossible

C I do not now

D using larger sample

E only having population

7. Elastic Net is

A the combination of L1 and L2 regularization

B the combination of L2 and L3 regularization

C is independent from other types of refularization

D I do not know

E not a type of regularization

8. Regularization is used only for

A Poisson Regression

B Linear Regression

C Logistic Regression

D any regression

E I do not know

9. Regularization can solve the problem of

A heteroscedasticity

B multicollinearity

C autocorrelation

D I do not know

10. As a result of regularization, we will have

- **A** smaller slope than in case of OLS
- **B** larger slope than in case of OLS
- **C** the slope remains the same
- **D** I do not know

11. The ridge coefficient estimates shrink towards zero

- **A** when lambda increases
- **B** when lambda decreases
- **C** when lambda = 0
- **D** I do not know

12. Which one can shrink the slope all the way to 0?

- **A** Lasso
- **B** Ridge
- **C** Regression
- **D** I do not know

13. When lambda = 0, we have

- **A** Ridge
- **B** Lasso
- **C** EL
- **D** Regression
- **E** I do not know

14. When alpha = 0, we have

- **A** Ridge
- **B** Lasso
- **C** EL
- **D** Regression
- **E** I do not know

15. Which function can help to perform cross-validation for regularization in R?

A cv.glmnet()

B cros_val()

C glmnet(method = "cv)

D I do not know

16. Why we use set.seed() in R?

A To have universal result

B To perform better result

C To have random models

D I do not know