**Assignment – 2**

Question 21.

When implementing linear regression of some dependent variable 𝑦 on the set of independent variables 𝐱 = (𝑥1, ..., 𝑥r), where 𝑟 is the number of predictors, which of the following statements will be true?

a) 𝛽0, 𝛽1, ..., 𝛽r are the regression coefficients.

b) Linear regression is about determining the best predicted weights by using the method of

ordinary least squares.

c) E is the random interval

d) Both and b

Answer: a) 𝛽0, 𝛽1, ..., 𝛽r are the regression coefficients.

Question 22.

What indicates that you have a perfect fit in linear regression?

a) The value 𝑅2 < 1, which corresponds to SSR = 0

b) The value 𝑅2 = 0, which corresponds to SSR = 1

c) The value 𝑅2 > 0, which corresponds to SSR = 1

d) The value 𝑅2 = 1, which corresponds to SSR = 0

Answer: d) The value R2 = 1, which corresponds to SSR = 0

Question 23.

In simple linear regression, the value of what shows the point where the estimated regression line crosses the 𝑦 axis?

a) Y b) B0 c) B1 d) F

Answer: b) B0

Question 24.

Check out these four linear regression plots:

b) Linear regression is about determining the best predicted weights by using the method of ordinary least

squares

Which one represents an underfitted model?

a) The bottom-left plot

b) The top-right plot

c) The bottom-right plot

d) The top-left plot

Answer: d) The Top-left plot

Question 25.

There are five basic steps when you’re implementing linear regression:

• a. Check the results of model fitting to know whether the model is satisfactory.

• b. Provide data to work with, and eventually do appropriate transformations.

• c. Apply the model for predictions.

• d. Import the packages and classes that you need.

• e. Create a regression model and fit it with existing data.

However, those steps are currently listed in the wrong order. What’s the correct order?

a) e, c, a, b, d

b) e, d, b, a, c

c) d, e, c, b, a

d) d, b, e, a, c

Answer: d) d, b, e, a, c

Question 26.

Which of the following are optional parameters to Linear Regression in scikit-learn?

a) Fit

b) fit\_intercept c) normalize d) copy\_X

e) n\_jobs

f) reshape

Answer: b) fit\_intercept

Question 27.

c) normalize

d) copy\_X

e) n\_jobs

While working with scikit-learn, in which type of regression do you need to transform the array of inputs to include nonlinear terms such as 𝑥2?

a) Multiple linear regression

b) Simple linear regression

c) Polynomial regression

Answer: c) Polynomial regression

Question 28.

You should choose stats models over scikit-learn when:

a) You want graphical representations of your data.

b) You’re working with nonlinear terms.

c) You need more detailed results.

d) You need to include optional parameters

Answer: c) You need more detailed results.

Question 29.

\_\_\_\_\_\_\_\_\_ is a fundamental package for scientific computing with Python. It offers

comprehensive mathematical functions, random number generators, linear algebra routines, Fourier transforms, and more. It provides a high-level syntax that makes it accessible and productive.

a) Pandas

b) Numpy

c) Statsmodel

d) Scipy

Answer: d) Scipy

Question 30.

\_\_\_\_\_\_\_\_\_ is a Python data visualization library based on Matplotlib. It provides a high-level interface for drawing attractive and informative statistical graphics that allow you to explore and understand your data. It integrates closely with pandas data structures.

a) Bokeh

b) Seaborn

c) Matplotlib

d) Dash

Answer: b) Seaborn