Answer to objective questions

1. 21 When implementing linear regression of some dependent variable y on the set of independent variables $\mathbf{x} = (x_1, \ldots, x_r)$, where r is the number of predictors, which of the following statements will be true? a) $\beta_0, \beta_1, \ldots, \beta_r$ 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 a and b
   Ans: d

2. What indicates that you have a perfect fit in linear regression?
   a) The value $R^2 < 1$, which corresponds to SSR = 0
   b) The value $R^2 = 0$, which corresponds to SSR = 1
   c) The value $R^2 > 0$, which corresponds to SSR = 1
   d) The value $R^2 = 1$, which corresponds to SSR = 0

   Ans: d

3. 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
   Ans: b

4. Ans: d
5. 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?

   Ans: d,b,e,a,c=d
6. Which of the following are optional parameters to LinearRegression in scikit-learn?
   a) Fit
   b) fit_intercept
   c) normalize
   d) copy_X
   e) n_jobs
   f) reshape
   Ans: b,c,d,e,f
7. 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 x^2?
   a)Multiple linear regression
   b) Simple linear regression
   c) Polynomial regression

Ans: c

8. You should choose statsmodels 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
   Ans: c
9. _____ 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
   Ans: b

10. Ans: b
11. Among the following identify the one in which dimensionality reduction reduces.
    a) Performance
    b) statistics
    c) Entropy
    d) Collinearity
    Ans: d

12. Which of the following machine learning algorithm is based upon the idea of bagging?
    a) Decision Tree
    b) Random Forest
    c) Classification
    d) SVM
    Ans: b

13. Choose a disadvantage of decision trees among the following.
    a) Decision tree robust to outliers
    b) Factor analysis
    c) Decision Tree are prone to overfit
    d) all the above
    Ans: C

14. What is the term known as on which the machine learning algorithms build a model based on sample data?
    a) Data Training
    b) Sample Data
    c) Training data
    d) None of the above
    Ans: C

15. Which of the following machine learning techniques helps in detecting the outliers in data?
    a) Clustering
    b) Classification
    c) Anamoly detection
    d) All of the above
    Ans: C

16. Identify the incorrect numerical functions in the various function representation of machine learning.
    a) Support Vector
    b) Regression
    c) Case based
    d) Classification
    Ans: C

17. Analysis of ML algorithm needs
    a) Statistical learning theory
    b) Computational learning theory
    c) None of the above
    d) Both a and b
    Ans: d

18. Identify the difficulties with the k-nearest neighbor algorithm.
    a) Curse of dimensionality
    b) Calculate the distance of test case for all training cases
    c) Both a and b
    d) None
    Ans: c

19. The total types of the layer in radial basis function neural networks is _____
    a) 1
    b) 2
    c) 3
    d) 4
    Ans: 2

20. Which of the following is not a supervised learning
    a) PCA
    b) Naïve bayes
    c) Linear regression
    d) KMeans
    Ans: d