WORKSHEET 3 #PFA FILE 3

Among the following identify the one in which dimensionality reduction reduces. a) Performance b) Statistics c) Entropy d) Collinearity

ANS:: Collinearity

1. 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:: Random Forest

2. 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 of the above

   ANS:: c) Decision Tree are prone to overfit

3. What is the term the machine learning algorithms use to build a model based on sample data? a) Data Training b) Sample Data c) Training data d) None of the above
   ANS:: Training data

4. 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:: Anamoly detection

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

   ANS:: Case based

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

   ANS: Both a and b

7. 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:: Both a and b
8. The total types of the layer in radial basis function neural networks is _____ a) 1 b) 2 c) 3 d) 4
   ANS:: 2
9. Which of the following is not a supervised learning a) PCA b) Naïve Bayes c) Linear regression d) KMeans
   ANS:: KMeans
10. What is unsupervised learning? a) Number of groups may be known b) Features of groups explicitly stated c) Neither feature nor number of groups is known d) None of the above
    ANS:: c) Neither feature nor number of groups is known
11. Which of the following is not a machine learning algorithm? a) SVM b) SVG c) Random Forest Algorithm d) None of the above
    ANS:: SVG

12.) _____ is the scenario when the model fails to decipher the underlying trend in the input data a) Overfitting b) Underfitting c) Both a and b d) None of the above
    ANS:: b) Underfitting
13. Real-Time decisions, Game AI, Learning Tasks, Skill acquisition, and Robot Navigation are applications of ..... a) Reinforcement learning b) Supervised learning c) Unsupervised Learning d) None of the above

    ANS:: a) Reinforcement learning

14.) What is called the average squared difference between classifier predicted output and actual output? 55) What is called the average squared difference between 55classifier a) Mean relative error b) Mean squared error c) Mean absolute error d) Root mean squared error
    ANS:: b) Mean squared error

15. Logistic regression is a ..... regression technique that is used to model data having a ..... outcome. a) Linear, binary b) Linear, numeric c) Nonlinear, binary d) Nonlinear, numeric
    ANS:: a) Linear, binary
16. You are given reviews of a few Netflix series marked as positive, negative, and neutral. Classifying reviews of a new Netflix series is an example of A. supervised learning B. unsupervised learning C. semisupervised learning D. reinforcement learning
    ANS:: A. supervised learning

17.) Following are powerful distance metrics used by the Geometric model A. Euclidean distance B. Manhattan distance C. both a and b D. square distance
    ANS:: Both a and b

18.) Which of the following techniques would perform better for reducing dimensions of a data set? A. removing columns which have too many missing values B. removing columns which have high variance in data C. removing columns with dissimilar data trends D. none of these

    ANS:: B. removing columns which have high variance in data C. removing columns with dissimilar data trends

19. According to the statement, Supervised learning and unsupervised clustering both require which is correct. A. output attribute. B. hidden attribute. C. input attribute. D. categorical attribute
    ANS:: C. input attribute

20. What is the meaning of hard margin in SVM? (A) SVM allows a very low error in classification (B) SVM allows a high amount of error in classification (C) Underfitting (D) SVM is highly flexible
    ANS:: (A) SVM allows a very low error in classification

21. Increase in which of the following hyperparameters results in overfit in Random forest? (1). Number of Trees. (2). Depth of Tree, (3). Learning Rate (A) Only 1 (B) Only 2 (C) 2 and 3 (D) 1,2 and 3

ANS:: B) Only 2

22. Below are the 8 actual values of the target variable in the training file: [0,0,0, 0, 1, 1,1,1,1,1], What is the entropy of the target variable? (A) -(6/10 log(6/10) + 4/10 log(4/10)) (B) 6/10 log(6/10) + 4/10 log(4/10) (C) 4/10 log(6/10) + 6/10 log(4/10) (D) 6/10 log(4/10) – 4/10 log(6/10)
ANS:: (A) -(6/10 log(6/10) + 4/10 log(4/10))

23.) Lasso can be interpreted as least-squares linear regression where (A) weights are regularized with the l1 norm (B) weights are regularized with the l2 norm (C) the solution algorithm is simpler
ANS:: (A) weights are regularized with the l1 norm

24. Consider the problem of binary classification. Assume I trained a model on a linearly separable training set, and now I have a new labeled data point that the model properly categorized and is far away from the decision border. In which instances are the learned decision boundary likely to change if I now add this additional point to my previous training set and re-train? When the training model is, (A) Perceptron and logistic regression (B) Logistic regression and Gaussian discriminant analysis (C) Support vector machine (D) Perceptron

ANS::, (A) Perceptron and logistic regression, (D) Perceptron

25. A least squares regression study of weight (y) and height (x) yielded the following least squares line: y = 120 + 5x. This means that if the height is increased by one inch, the weight should increase by what amount? (A) increase by 1 pound (B) increase by 5 pounds (C) increase by 125 pounds (D) None of the above

ANS:: (B) increase by 5 pound

26. The line described by the linear regression equation (OLS) attempts to ____? (A) Pass through as many points as possible. (B) Pass through as few points as possible (C) Minimize the number of points it touches (D) Minimize the squared distance from the points

ANS:: (D) Minimize the squared distance from the points

27. the line described by the linear regression equation (OLS) attempts to ____? (A) Pass through as many points as possible. (B) Pass through as few points as possible (C) Minimize the number of points it touches (D) Minimize the squared distance from the points

ANS:: D) Minimize the squared distance from the points

28. For two real-valued attributes, the correlation coefficient is 0.85. What does this value indicate? (A) The attributes are not linearly related (B) As the value of one attribute increases (C) As the value of one attribute decreases the value of the second attribute increases (D) The attributes show a curvilinear relationship

ANS:: (B) As the value of one attribute increases the value of the second attribute also increases

29. Which neural network architecture would be most suited to handle an image identification problem (recognizing a dog in a photo)? (A) Multi-Layer Perceptron (B) Convolutional Neural Network (C) Recurrent Neural network (D) Perceptron

ANS:: (B) Convolutional Neural Network