

1) Among the following identify the one in which dimensionality reduction reduces.

- a) Performance
- b) statistics
- c) Entropy
- d) Collinearity

**Ans: d) Collinearity**

2) 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) Random Forest**

3) 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: a) Decision tree robust to outliers**

4) 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) Training data**

5) Which of the following machine learning techniques helps in detecting the outliers in data?

- a) Clustering
- b) Classification
- c) Anomaly detection
- d) All of the above

**Ans: c) Anomaly detection**

6) 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) Case based**

7) 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) Both a and b**

8) 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) Both a and b**

9) The total types of the layer in radial basis function neural networks is \_\_\_\_\_

- a) 1
- b) 2
- c) 3
- d) 4

**Ans: 3 types**

10) Which of the following is not a supervised learning

- a) PCA
- b) Naïve bayes
- c) Linear regression
- d) KMeans

**Ans: a) PCA**

11) 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**

12) Which of the following is not a machine learning algorithm?

- a) SVM
- b) SVG
- c) Random Forest Algorithm
- d) None of the above

**Ans: b) SVG**

13) \_\_\_\_\_ 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**

14) 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**

15) 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**

16) 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: d) Nonlinear, numeric**

17) You are given reviews of 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**

18) Following is powerful distance metrics used by Geometric model

- A. euclidean distance
- B. manhattan distance
- C. both a and b
- D. square distance

**Ans: C. both a and b**

19) 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: A. removing columns which have too many missing values**

20) Supervised learning and unsupervised clustering both require which is correct according to the statement.

- A. output attribute.
- B. hidden attribute.
- C. input attribute.
- D. categorical attribute

**Ans: C. input attribute.**

21) What is the meaning of hard margin in SVM?

- (A) SVM allows very low error in classification
- (B) SVM allows high amount of error in classification
- C) Underfitting
- (D) SVM is highly flexible

**Ans: (B) SVM allows high amount of error in classification**

22) Increase in which of the following hyper parameter results into 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**

23) Below are the 8 actual values of target variable in the train 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)  $-(6/10 \log(6/10) + 4/10 \log(4/10))$**

24) 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**



25) 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 is the learnt 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: (B) Logistic regression and Gaussian discriminant analysis**

26) Assume you've discovered multi-collinear features. Which of the following actions do you intend to take next?

- (1). Both collinear variables should be removed.
- (2). Instead of deleting both variables, we can simply delete one.
- (3). Removing correlated variables may result in information loss. We may utilize penalized regression models such as ridge or lasso regression to keep such variables.

- (A) Only 1
- (B) Only 2
- (C) Either 1 or 3
- (D) Either 2 or 3

**Ans: (D) Either 2 or 3**

27) 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 pound
- (C) increase by 125 pound
- (D) None of the above

**Ans: (B) increase by 5 pound**

28) 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: (A) Pass through as many points as possible.**

29) 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 the value of the second attribute also increases
- (C) As the value of one attribute decreases the value of the second attribute increases
- (D) The attributes show a curvilinear relationship

**Ans: (A) The attributes are not linearly related**

30) 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**