Assignment 6

Unit 8 - Week 6

Please read the following questions carefully. You must show all of your working to get full marks.

1. Which of the following is true about PCA:
   a. It is a supervised learning technique.
   b. It is used to reduce the number of dimensions.
   c. It is used to increase the number of dimensions.
   d. It is used to classify data into different classes.

2. Which of the following is true about SVM:
   a. It is used to classify data into different classes.
   b. It is a regression technique.
   c. It is used to find the best hyperplane that maximizes the margin.
   d. It is used to reduce the number of dimensions.

3. Which of the following is true about K-means:
   a. It is used to classify data into different classes.
   b. It is an unsupervised learning technique.
   c. It is used to find the best hyperplane that maximizes the margin.
   d. It is used to reduce the number of dimensions.

4. Which of the following is true about decision trees?
   a. It is used to classify data into different classes.
   b. It is an unsupervised learning technique.
   c. It is used to find the best hyperplane that maximizes the margin.
   d. It is used to reduce the number of dimensions.

5. Which of the following is true about neural networks?
   a. It is used to classify data into different classes.
   b. It is an unsupervised learning technique.
   c. It is used to find the best hyperplane that maximizes the margin.
   d. It is used to reduce the number of dimensions.

6. If a dataset has 10 features and you perform PCA to reduce the number of dimensions to 3, what can you say about the dataset?
   a. The new dataset will have 3 features.
   b. The new dataset will have 10 features.
   c. The new dataset will have 13 features.
   d. The new dataset will have 0 features.

7. If a dataset has 10 features and you perform dimensionality reduction using PCA to reduce the number of features to 3, what can you say about the dataset?
   a. The new dataset will have 3 features.
   b. The new dataset will have 10 features.
   c. The new dataset will have 13 features.
   d. The new dataset will have 0 features.

8. Which of the following is true about SVM:
   a. It is a supervised learning technique.
   b. It is used to reduce the number of dimensions.
   c. It is used to find the best hyperplane that maximizes the margin.
   d. It is used to classify data into different classes.

9. Which of the following is true about decision trees?
   a. It is used to classify data into different classes.
   b. It is an unsupervised learning technique.
   c. It is used to find the best hyperplane that maximizes the margin.
   d. It is used to reduce the number of dimensions.

10. Which of the following is true about neural networks?
    a. It is used to classify data into different classes.
    b. It is an unsupervised learning technique.
    c. It is used to find the best hyperplane that maximizes the margin.
    d. It is used to reduce the number of dimensions.

11. Which of the following is true about K-means:
    a. It is used to classify data into different classes.
    b. It is an unsupervised learning technique.
    c. It is used to find the best hyperplane that maximizes the margin.
    d. It is used to reduce the number of dimensions.

12. Which of the following is true about PCA:
    a. It is a supervised learning technique.
    b. It is used to reduce the number of dimensions.
    c. It is used to find the best hyperplane that maximizes the margin.
    d. It is used to classify data into different classes.

13. Which of the following is true about SVM:
    a. It is a supervised learning technique.
    b. It is used to reduce the number of dimensions.
    c. It is used to find the best hyperplane that maximizes the margin.
    d. It is used to classify data into different classes.

14. Which of the following is true about decision trees?
    a. It is used to classify data into different classes.
    b. It is an unsupervised learning technique.
    c. It is used to find the best hyperplane that maximizes the margin.
    d. It is used to reduce the number of dimensions.

15. Which of the following is true about neural networks?
    a. It is used to classify data into different classes.
    b. It is an unsupervised learning technique.
    c. It is used to find the best hyperplane that maximizes the margin.
    d. It is used to reduce the number of dimensions.