

Each question will carry equal marks.

1. What are the different pattern recognition methods. Write down the approaches of pattern recognition with suitable diagram and compare them. Construct the pattern recognition system Architecture.

OR

- a. Define pattern recognition life cycle . Explain its each component with suitable diagram.
 - b. Write down the Decision theory algorithm and implement with a suitable example.
2. What is the Bayes decision rule ? What is the Bayes Decision theory for continuous features? Given an example where the feature space would be continuous and such a decision theory is useful.

OR

What is decision surface? How can you implement normal density function and minimum error rate classification in Bayesian decision theory.

3. a. What do you mean by Principal component? How can you implement Principal component analysis method to recognize pattern discuss along with the PCA algorithm.
- b. Define Adaline and Madaline network and implement Madaline network with example.

OR

Write down the Back propagation Learning Algorithm for training and testing data and implement it with a suitable example.

4. What do you mean by Clustering? Discuss different types of Clustering methods. Write down K-Means and K-Medoids clustering algorithm and explain it by giving a suitable example.

OR

- a. To which category of clustering schemes does the DBSCAN algorithm belong? Write down DBSCAN algorithm. What is its major advantage?
- b. Write down the criteria for clustering and different distance functions and similarity measures for clustering and explain them by giving a suitable example.

5. a. How can you recognize input data by string identification? Implement the string recognition approach algorithm with example.
- b. What is grammar? How grammatical method can be applicable for recognition of pattern explain with the string "Pattern Recognition is very difficult to understand".

OR

- c. Write down the Decision tree algorithm for classification and analyze it by giving appropriate example.

- d. What is the use of Pattern recognition in the field of multimedia? How can you recognize objects, actors, words and voice in video or audio using pattern explain with example?