BICSE-018

B.Tech. – VIEP – COMPUTER SCIENCE AND ENGINEERING (BTCSVI)

Term-End Examination

00273

June, 2018

BICSE-018 : PATTERN RECOGNITION

Time : 3 hours *Maximum Marks : 70*

Note : *Answer any* ***seven*** *questions. All questions carry equal marks.*

1. Write the line detection algorithm. Discuss the application of this algorithm with the help of suitable example. *10*

2. (a) Discuss the term Laplacian in pattern recognition. Determine Laplacian of a continuous image. *5*

(b) Write salient features of grayscale image and true-color image. *5*

3. (a) Differentiate between supervised and unsupervised learning. List the algorithms identified under each head separately. *5*

(b) Discuss the role of neural networks in pattern recognition. Give suitable example in support of your discussion. 5

4. Write short notes on any ***two*** of the following : 10

(a) Fuzzy Classifier

(b) Indexed Image

(c) Classification

(d) Clustering

5. (a) Differentiate between regular and irregular patterns. Give suitable example of each along with their advantages and disadvantages. 5

(b) What are fuzzy and rough pattern sets ? Discuss their role in pattern representation. 5

6. What do you understand by the term Boundary detection ? List the boundary detection algorithms. Discuss any one algorithm in detail. 10

7. What do you understand by the term Feature, in the context of pattern recognition ? Discuss the concepts of feature detection and feature extraction. List the algorithms for feature detection and feature extraction. 10

8. Discuss any ***two*** of the following with suitable examples : *10*

   (a) Feature selection

   (b) Neural classifier

   (c) Smoothing transformation

9. Explain, how object contours are located with the help of snake method. Give suitable diagram or example, in support of your explanation. *10*

10. (a) Explain the method involved in merger of two images. *5*

    (b) Discuss the computational model for boundary detection. *5*