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

Term-End Examination

00675

June, 2019

BICSE-018 : PATTERN RECOGNITION

Time : 3 hours   *Maximum Marks : 70*

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

1. What do you understand by the term pattern ? List some of the techniques of pattern recognition. How do regular patterns differ from irregular patterns ?   *10*

2. What is the role of dataset in pattern recognition ? List some well-known datasets. How does statistical pattern recognition differ from syntactic pattern recognition ?   *10*

3. Briefly discuss the salient features of the following type of images : **10**

   (a) Binary images

   (b) Greyscale images

   (c) True color images

   (d) Indexed images

4. Discuss the following types of grey level discontinuities detection in a digital image : **10**

   (a) Point

   (b) Line

   (c) Edge

   What are the stages of edge detection ?

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

   (a) Edge Linking Algorithms

   (b) Combined Detection Methods

   (c) Adaptive Classification of Fuzzy Grammar

6. Differentiate between the following : **10**

   (a) Clustering and Classification

   (b) Supervised and Unsupervised learning

7. What do you understand by the term 'feature' ? What are the essential characteristics of good features ? Briefly discuss the purpose of feature selection. **10**

8. Briefly discuss any *two* of the following descriptors for boundary description : *10*

   (a) Fourier descriptors

   (b) Projections

   (c) Concavity trees

9. List the fuzzy approaches that can be applied for pattern recognition. Discuss any fuzzy approach with suitable example. *10*

10. What are neural networks ? Discuss the role of neural networks in pattern recognition, with suitable example. *10*