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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Eighth Semester, B.E. - Electronics and Communication Engineering

Semester End Examination; June - 2017

Biometrics

Time: 3 hrs

Max. Marks: 100

Note: Answer FIVE full questions, selecting ONE full question from each unit.

UNIT - I

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| 1 a. Define Biometric. How it is classified? Explain any one type of physiological biometric system with an example. | 8 |
| b. Explain the application of biometrics. | 6 |
| c. Define fraud detection and also explain how this is achieved? | 6 |
| 2 a. Define preprocessing used in pattern recognition. Why is this process required in biometric applications? | 6 |
| b. What are the different steps involved in applying morphological operations? | 6 |
| c. Explain the hidden Markov model for recognizing Devanagari hand written character recognition. | 8 |

UNIT - II

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| 3 a. What do you mean by face detection? Explain. | 8 |
| b. What are the different types of feature extraction techniques presently used and also explain the significance of feature extraction? | 6 |
| c. What are the advantages of IF based face recognition? | 6 |
| 4 a. What are the difficulties of iris biometrics? Explain. | 6 |
| b. What are the various advantages and disadvantages of iris biometrics? | 6 |
| c. Explain the use of Hough transform in localization process. | 8 |

UNIT - III

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| 5 a. What are various features of finger prints? Explain. | 6 |
| b. Explain vein recognition system with the help of suitable block diagram. | 8 |
| c. How do we extract biometric vein patterns? | 6 |
| 6 a. Draw and explain various steps involved in ISL recognition system. | 8 |
| b. Explain any practical approach of object recognition with suitable example. | 6 |
| c. List the advantages and disadvantages of hand geometry biometrics. | 6 |

UNIT - IV

- 7 a. Differentiate between personal and informational primary issues. 8
- b. Define soft biometrics. How does it help in the biometrics with hand biometric modalities? 6
- c. Explain the privacy issues related with face, finger print and iris biometrics. 6
- 8 a. What are the various types of attacks encountered in crypto systems? 6
- b. Explain symmetric key ciphers with examples. 6
- c. Explain DES and RSA algorithms for biometric cryptography and compare their performance. 8

UNIT - V

- 9 a. Define PSNR, MSE and CRC. 6
- b. What are the various applications of image watermarking? Explain any one. 8
- c. Define data hiding and data protection. Why is data hiding required? 6
- 10 a. What are the expectations and benefits of biometric security technologies? 6
- b. What are the implementation issues and challenges in iris scan biometrics? 6
- c. How does biometric help in enterprise and corporate security? Explain with a suitable example. 8

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