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

(An Autonomous Institution affiliated to VTU, Belgaum)

**Eighth Semester, B.E. – Electronics and Communication Engineering**

**Semester End Examination; June/July - 2015**

### Biometrics

*Time: 3 hrs*

*Max. Marks: 100*

*Note: Answer any FIVE full questions, selecting atleast TWO full questions from each part.*

#### PART – A

1. a. Define biometric. How it is classified? Explain any one type of physiological biometric system with an example. 8
- b. List the benefit of a biometric system. 6
- c. Explain the role of pattern recognition in the implementation of biometric system. 6
2. a. Define the following with respect to any biometric system:
  - i) Authentication 8
  - ii) Authorization
  - iii) TPR and FAR
- b. What are the types of attacks for biometric system? 6
- c. Explain with suitable examples security issues of any biometric system. 6
3. a. Biometrics fails in certain structure-why? Mention the ethics and issues in a biometric system. 8
- b. Explain certain causes for failure of a biometric system. 6
- c. Explain the basic building blocks of any biometric system. 6
4. a. Explain with a block diagram a face recognition system. Mention the algorithm used for such a system implementation. 8
- b. List the advantages of, Palm scan biometric? How it is employed for person identification. 6
- c. Explain the role of ultra scanned in biometric system design. 6

#### PART – B

5. a. Write short notes on:
  - i) Signature biometrics 8
  - ii) Stylus pressure biometrics.
- b. Mention the areas of application of signature biometric system. 6
- c. Explain language independent algorithm used in any signature verification system. 6
6. a. Compare the features of
  - i) Iris recognizer with retina biometrics 12
  - ii) Palm seen biometrics with signature biometrics.

- b. What is PCA? How it is employed in face recognition system? 8
- 7. a. Explain the basic operation principle of a Gait biometric system. Where is it employed? 10
- b. “DNA biometrics” – is it an ultimate solution? If not discuss why it has gained popularity? 10
- 8. Write short notes on the following :
  - i) Future trends in bio informatics
  - ii) Ear recognition 20
  - iii) Multi biometrics
  - iv) Brain wave.

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