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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-2016

Biometrics

Time: 3 hrs

Max. Marks: 100

Note: Answer any FIVE full questions, selecting at least TWO full questions from each part.

PART - A

1. a. Define Biometrics. Explain the weaknesses found in present access control systems. How biometrics can solve these problems? 10
- b. List the various types of Biometrics. Explain any three of them. 10
2. a. Define the terms false acceptance rate (FAR) and false rejection rate (FRR). Explain with an example. 7
- b. Draw a convenience versus security graph for various biometric traits and explain. 7
- c. Explain the importance of 'Triple A' in any biometric system. 6
3. a. List five "Ethics Issues with Biometrics". Explain any two of them. 10
- b. Draw "The graph of mythical balance" and explain. 10
4. a. Explain the biometric basis for hand veins. List the practical considerations that should be addressed. Mention its usage. 10
- b. List and explain the various types of fingerprint/palm-print readers. 5
- c. Compare hand based biometrics types. 5

PART - B

5. a. Explain the biometric basis for stylus movement dynamics. List the practical considerations that should be addressed. Mention its usage. 10
- b. Compare various types of signature based biometrics. 10
6. a. Explain the biometric basis for iris recognition. List the practical considerations that should be addressed. Mention its usage. 10
- b. Discuss the following with respect to facial image biometrics : 10
- i) EBGM ii) PCA iii) LDA
7. a. Explain how DNA is used for biometric recognition. 10
- b. Compare the following biometric types : 10
- i) Speaker recognition ii) DNA
- iii) Gait iv) Typing dynamics.

- 8 a. What do you infer from the term “attack on a biometric system”? 2

- b. Discuss the following types of attacks : 8
 - i) Reply attack ii) Stolen credentials
 - iii) Bypass attack iv) Re-enrollment attack.

- c. Explain the following with respect to protecting biometric infrastructure : 10
 - i) Protecting biometric device
 - ii) Protecting communications
 - iii) Protecting services.

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