CPE407/ECG607 Biometrics

Spring 2008, 3 credits Test#1

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1. Explain in one or two sentences each the five desired attributes of a good biometric: (a) Universality, (b) Uniqueness, (c) Permanence, (d) Collectability, and (e) Acceptability.
2. Give one example each of (a) Physical Access Control, and (b) Logical Access Control.
3. Give five examples each of (a) Physiological biometrics, and (b) Behavioral biometrics.
4. Explain in one or two sentences the difference between identification and verification.
5. Give two examples of events that require a biometric system to have exception handling capability.
6. What are the two types of errors that can be made by a biometric system during a positive identification?
7. What is the difference between positive identification and negative identification?
8. Explain in one or two sentences what non-repudiation for a biometric system means.
9. For each of the following items, identify what token out of P, K, and B is appropriate: (a) Password, (b) ATM card, (c) Iris, (d) Keys, (e) Face.
10. Draw a diagram that shows the major steps of a threshold based biometric identification protocol, and another one for verification protocol.
11. Give the names of four technologies used for fingerprint acquisition.
12. Explain in one or two sentences how minutiae are used in fingerprint matching.
13. Explain briefly how Henry system is used in fingerprint matching.
14. Is fingerprint a genotype or a phenotype?
15. What is the difference between eigenface method and feature based method for face recognition?
16. What are the four different ways to perform speaker recognition?
17. What is the difference between static and dynamic signatures?
18. What variables or features are used for performing keystroke identification?
19. What feature of retina is used for retina recognition?
20. What advantage does a thermogram based face recognition have over a camera based system?