

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

B.Tech Degree S8 (R, S) Exam April 2025 (2019 Scheme)

**Course Code: CCT402****Course Name: BIOMETRIC SECURITY****Max. Marks: 100****Duration: 3 Hours****PART A***Answer all questions, each carries 3 marks.*

Marks

- |    |  |     |
|----|--|-----|
| 1  | What are the characteristics of a good biometric system?         | (3) |
| 2  | Discuss different security and privacy issues in biometrics.     | (3) |
| 3  | List any 3 fingerprint deployments.                              | (3) |
| 4  | List different Competing Finger-Scan technologies                | (3) |
| 5  | How does a signature scan work?                                  | (3) |
| 6  | What are Haar-Like Features? Which are the 3 Haar-Like Features? | (3) |
| 7  | How iris encoding and iris matching process takes place.         | (3) |
| 8  | Which are the matching strategies in gait biometrics?            | (3) |
| 9  | Give examples of notable biometric databases.                    | (3) |
| 10 | Differentiate collision and coercion                             | (3) |

**PART B***Answer any one full question from each module, each carries 14 marks.***Module I**

- |    |  |     |
|----|--|-----|
| 11 | a) Compare and contrast a Traditional authentication system with a Biometric system. | (6) |
|    | b) Explain different Performance measures in Biometric Systems.                      | (8) |

**OR**

- |    |  |     |
|----|--|-----|
| 12 | a) Explain different Performance measures in Biometric Systems.      | (9) |
|    | b) Differentiate Physiological Biometrics and Behavioral Biometrics. | (5) |

**Module II**

- |    |   |     |
|----|---|-----|
| 13 | a) Discuss Loop pattern, Whorl pattern, Arch pattern. | (8) |
|    | b) Explain strength and weakness of finger scan.      | (6) |

**OR**

- 14 a) Explain palm printing. (8)  
b) Differentiate indexing and synthesis used in fingerprint recognition. (6)

**Module III**

- 15 a) Explain appearance-based face recognition. (4)  
b) What are the features of a heterogeneous face recognition system compared to a traditional system? (10)

**OR**

- 16 a) Explain the strength and weakness of Facial scan. (6)  
b) How Linear Discriminant Analysis is typically applied in face recognition? (8)

**Module IV**

- 17 a) The iris texture exhibits a great degree of irregularity and its textural content varies substantially across eyes. Explain the challenges faced in iris segmentation. (6)  
b) What are the Challenges in Ear detection? Explain (8)

**OR**

- 18 a) How does iris normalization typically work? (8)  
b) Which are the techniques used in ear recognition? (6)

**Module V**

- 19 a) List and explain different database attacks in biometric systems. (8)  
b) Explain any three biometric standards. (6)

**OR**

- 20 a) Explain (6)  
    1) Impersonation  
    2) Obfuscation  
    3) Spoofing  
b) Explain different infrastructure attacks. (8)

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