

# KAMARAJ COLLEGE (Autonomous)

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(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)

(4 Pages)

Reg. No:.....

Question Code No : 26E01111

Course Code : 24UECS43

UG Degree - End Semester Examinations, April 2026

Fourth Semester

B.Sc., COMPUTER SCIENCE

Biometrics

(For those who joined in July 2024 onwards)

Time : 3Hours

Maximum : 75 Marks

## PART - A (10 × 1 = 10 Marks)

Answer ALL Questions

Choose the correct answer :

CO:1 1. Biometrics mainly deals with:\_\_\_\_\_

- K:1 (a) Network security (b) Human identification  
(c) Data compression (d) Image editing

CO:1 2. Which step comes first in biometric authentication?

- K:2 (a) Matching (b) Decision making  
(c) Feature extraction (d) Data acquisition

CO:2 3. Which of the following is a face recognition method?

- K:1 (a) Minutiae matching (b) Eigenfaces  
(c) Gait analysis (d) Keystroke dynamics

CO:2 4. Which device is commonly used in iris recognition?

- K:1 (a) Microphone (b) Infrared camera  
(c) Touch sensor (d) Scanner bed

CO:3 5. Fingerprint biometrics is based on:\_\_\_\_\_

- K:1 (a) Finger shape (b) Ridge and valley patterns  
(c) Nail structure (d) Hand size

CO:3 6. Which is a major privacy concern in biometric systems?

- K:1 (a) Template leakage (b) Hardware failure  
(c) Power consumption (d) Screen size

- CO:4 7. In multimodal biometric architecture, which module combines  
K:2 information from different traits?  
(a) Sensor module (b) Fusion module  
(c) Matching module (d) Decision module
- CO:4 8. In watermarking, the watermark is usually embedded  
K:1 into:\_\_\_\_\_   
(a) Header file (b) Metadata only  
(c) Digital media such as image, audio or video (d) Password file
- CO:5 9. Which of the following is a physiological biometric trait?  
K:1 (a) Signature (b) Voice  
(c) Fingerprint (d) Keystroke dynamics
- CO:5 10. Which biometric trait is most stable over a lifetime?  
K:1 (a) Face (b) Voice  
(c) Signature (d) DNA

**PART - B (5 X 5 = 25 Marks)**

**Answer ALL Questions choosing either (a) or (b).**

**Answer should not exceed 250 words.**

- CO:1 11. (a) Explain the general architecture of a biometric system with  
K:4 its components.

**(OR)**

- (b) Analyze the errors in biometric systems and explain their performance measures.

- CO:2 12. (a) Organize the design of a Face Recognition System with a  
K:3 neat block diagram.

**(OR)**

- (b) Construct the working of a Retina biometric system.

- CO:3 13. (a) Utilize palm vein biometrics and describe how vein patterns  
K:3 of the palm are used for personal identification.

**(OR)**

- (b) Identify the major privacy concerns associated with biometric deployments.

CO:4 14. (a) Construct the basic architecture of a multimodal biometric  
K:3 system.

**(OR)**

(b) Utilize the classification of watermarking techniques.

CO:5 15. (a) Analyse the various biometric technologies used for  
K:3 identification and authentication.

**(OR)**

(b) Identify the role of RFID in biometric systems.

**PART - C (5 X 8 = 40 Marks)**

**Answer ALL Questions choosing either (a) or (b).**

**Answer should not exceed 500 words.**

CO:1 16. (a) Identify the types of biometric traits used in authentication  
K:3 systems.

**(OR)**

(b) Organize the applications of biometric systems in real-world scenarios.

CO:2 17. (a) Asses the design and working of a Face Recognition System  
K:3 with a neat block diagram.

**(OR)**

(b) Interpret the design and working of an Iris Recognition System.

CO:3 18. (a) Analyze the working of a fingerprint recognition system and  
K:4 discuss its advantages and disadvantages.

**(OR)**

(b) Examine the role of soft biometrics in biometric systems.

CO:4 19. (a) Describe Multimodal Biometrics using Face and Ear with a  
K:3 suitable block diagram explanation.

**(OR)**

(b) Explain watermarking and describe the basic framework of a digital watermarking system.

CO:5 20. (a) Explain the role of biometrics in Information Technology  
K:5 infrastructure.

**(OR)**

(b) Explain DNA biometrics and its applications.