

29. a. "Potential for privacy abuse due to non-cooperative enrollment and identify action". Explain in case of facial scan. 10 4 4 2

(OR)

b. Discuss on securing and trusting a biometric transaction. 10 3 4 3

30. a. Relate the support vector machines with biometric authentication system. 10 3 5 2

(OR)

b. (i) Are biometrics more secure than passwords? Justify your answer. 5 4 5 3  
(ii) Write a note on threshold and its needs 5

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Reg. No.

**B.Tech. DEGREE EXAMINATION, MAY 2022**  
Fifth & Sixth Semester

18CSE357T – BIOMETRICS

(For the candidates admitted from the academic year 2018-2019 to 2019-2020)

Note:

- (i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40<sup>th</sup> minute.  
(ii) **Part - B** should be answered in answer booklet.

Time: 2½ Hours

Max. Marks: 75

**PART – A (25 × 1 = 25 Marks)**

Answer ALL Questions

- |                                                                                                                                                                                                                                                                   | Marks | BL | CO | PO |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----|----|----|
| 1. Consists of the hardware in a biometric device that converts biometric input into electrical signals and conveys this information to the attached device<br>(A) Arch (B) Sensor<br>(C) Identity (D) Mimic                                                      | 1     | 2  | 1  | 1  |
| 2. The automated process of locating and encoding distinctive characteristics from a biometric sample in order to generate a template<br>(A) Verification (B) Feature selection<br>(C) Feature extraction (D) Signature verification                              | 1     | 2  | 1  | 1  |
| 3. The number of non-corresponding digit in a string of binary digits is used to measure dissimilarity<br>(A) Live scan (B) Adjustable<br>(C) Characteristics (D) Hamming distance                                                                                | 1     | 1  | 1  | 2  |
| 4. The process of recognizing an individuals handwritten signature is<br>(A) Signature dynamics (B) Voice verification<br>(C) Feature extraction (D) Signature verification                                                                                       | 1     | 1  | 1  | 2  |
| 5. Every face has numerous, distinguishable land marks, the different peaks and valleys that make up facial features are<br>(A) Nodal points (B) Face print<br>(C) Minutiae points (D) Modality                                                                   | 1     | 2  | 1  | 3  |
| 6. A biometric modality that uses the cadence of an individual's typing pattern for recognition is<br>(A) Iris recognition (B) Thermo grams<br>(C) Key stroke dynamics (D) Verification                                                                           | 1     | 2  | 2  | 1  |
| 7. A biometric task where an unidentified individual is known to be in the database and the system attempts to determine his/her identity is,<br>(A) Closed-set identification (B) Voice verification<br>(C) Biometric identification (D) Open-set identification | 1     | 2  | 2  | 2  |

8. Refers to a fingerprint capture device that electronically captures fingerprint images using a sensor. 1 2 2 3  
 (A) Life scan (B) Bifurcation  
 (C) Live capture (D) Identity
9. \_\_\_\_\_ is a branch of information technology that aims towards establishing one's identity based on personal traits 1 1 2 1  
 (A) Control systems (B) Biometric  
 (C) Convex optimization (D) Pulse
10. Biometrics is a technology used to \_\_\_\_\_ an individual's physical and behavioural characteristics 1 1 2 2  
 (A) Identify (B) Analyze  
 (C) Measure (D) Identify, analyze and measure
11. Biometrics is used for \_\_\_\_\_ a person. 1 1 3 1  
 (A) Authenticating (B) Authorizing  
 (C) Authenticating and authorizing (D) Specifying
12. Which process tries to find out answer for question, are you the same who you are claiming to be? or Do I know you? 1 1 3 2  
 (A) Verification (B) Authentication  
 (C) Authorization (D) Security
13. \_\_\_\_\_ is a digital reference of the distinct characteristics that are extracted from a biometric sample. 1 2 3 2  
 (A) Candidate/ subject (B) Enrollment  
 (C) Biometric template (D) FAR
14. FAR stands for \_\_\_\_\_. 1 1 3 1  
 (A) False Authentication Rate (B) False Acceptance Rate  
 (C) False Authorization Rate (D) False Authorization Risk
15. A biometric system providing LOW FAR ensures high security 1 2 3 2  
 (A) Yes (B) No  
 (C) Can be yes or no (D) Cannot say
16. \_\_\_\_\_ benefit multi-sample system with capture multiple snapshot of the same biometric. 1 1 3 4  
 (A) Rank level fusion (B) Instance level fusion  
 (C) Decision level fusion (D) Sensor level fusion
17. To acquire adequate amount of data, the signature should be \_\_\_\_\_ enough to fit on tablet and big enough to be able to deal with. 1 1 4 2  
 (A) Big (B) Medium  
 (C) Small (D) Very small
18. Intrinsic failure contains? 1 1 4 1  
 (A) Non-working system (B) Decision making modules  
 (C) Feature extraction modules (D) Segmentation modules

19. \_\_\_\_\_ is the duration of time for which a key is pressed. 1 1 4 2  
 (A) Dwell time (B) Flight time  
 (C) Static (D) Dynamic
20. How many ways in which a biometric system can fail to work? 1 2 4 3  
 (A) 0 (B) 1  
 (C) 2 (D) 3
21. The security of a biometric system is important as the biometric data is not easy to? 1 1 4 1  
 (A) Replace (B) Revoke  
 (C) Replace and revoke (D) Quit
22. How many authenticities in a biometric system? 1 1 5 1  
 (A) 1 (B) 2  
 (C) 3 (D) 4
23. Which is the condition of being complete and unaltered that refers to its consistency accuracy and correctness? 1 2 5 1  
 (A) Authenticity (B) Confidentiality  
 (C) Non-repudiation (D) Integrity
24. Designing a biometric system accuracy with respect to? 1 1 5 2  
 (A) FAR (B) FRR  
 (C) FCR (D) FAR and FRR
25. Which among the following is not the algorithm used for gesture interpretation? 1 1 5 4  
 (A) 3D model based (B) Appearance based models  
 (C) Skeletal based models (D) Logistic regression models

**PART – B (5 × 10 = 50 Marks)**

Answer **ALL** Questions

- |                                                                                                                                             | Marks | BL | CO | PO |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------|----|----|----|
| 26. a. Construct a multi model biometric system for a IT company using fusion strategies and elaborate the system with performance measure. | 10    | 3  | 1  | 1  |
| <b>(OR)</b>                                                                                                                                 |       |    |    |    |
| b. Explain the metrics of accuracy in biometrics and state the factors affecting these metrics.                                             | 10    | 4  | 1  | 2  |
| 27. a. Explain ridge feature based fingerprint matching using any filter method.                                                            | 10    | 4  | 2  | 3  |
| <b>(OR)</b>                                                                                                                                 |       |    |    |    |
| b. Explain the method to estimate the local ridge orientation in fingerprint.                                                               | 10    | 3  | 2  | 1  |
| 28. a. Explain how face recognition is carried out using PCA.                                                                               | 10    | 3  | 3  | 2  |
| <b>(OR)</b>                                                                                                                                 |       |    |    |    |
| b. Describe the face recognition technique using shape and texture.                                                                         | 10    | 3  | 3  | 1  |