

**MCA (CBCS) (Sem.-V) Examination  
November-2013  
ECA-5023 : Biometrics Technology**

**Faculty Code : 003  
Subject Code : 007504**

**Time : 2½ Hours]**

**[Total Marks : 70**

1. Answer the following multiple choice : 15
- (1) \_\_\_\_\_ is the automated use of physiological or behavioural characteristics to determine or verify identity.
- (a) Bioinformatics (b) Biometrics  
(c) (a) and (b) both (d) None of these
- (2) Biometrics are based on
- (a) Finger-scan (b) Facial scan  
(c) Iris scan (d) All of the above
- (3) Which of the following is false ?
- (a) Verification system is faster  
(b) Identification system require more computational power  
(c) Verification system is more accurate  
(d) None of these
- (4) \_\_\_\_\_ system monitor, restrict or grant movement of a person.
- (a) Physical (b) Logical  
(c) (a) and (b) both (d) None of these
- (5) Biometric matching involves
- (a) Enrollment and template creation  
(b) Presentation  
(c) (a) and (b) both  
(d) All of the above
- (6) \_\_\_\_\_ is a small file derived from the distinctive features of a user's biometric data.
- (a) Enrollment (b) Template  
(c) (a) and (b) both (d) None of these
- (7) Which of the following is true with FMR ?
- (a) FMR is also referred as FAR (b) FMR is also referred as FTR  
(c) (a) and (b) both (d) All of the above

- (8) Which of the following is true ?
- (a) FNMR means false nonmatch rate.
  - (b) FNMR means false rejection rate.
  - (c) FNMR occurs because this is not a sufficiently strong correlation between a user's verification and enrollment templates.
  - (d) All of the above.
- (9) Which of the following has low susceptibility to changes in biometric data ?
- (a) Signature scan
  - (b) Iris scan
  - (c) Hand scan
  - (d) All of the above
- (10) The surface on which the finger is placed is called
- (a) Platen
  - (b) Scanner
  - (c) (a) and (b) both
  - (d) None of these
- (11) The lowest DPI generally found in the finger scan is
- (a) 300-350
  - (b) 400-450
  - (c) 500-550
  - (d) None of these
- (12) Facial scan is
- (a) 1 : many verification
  - (b) 1 : 1 verification
  - (c) (a) and (b) both
  - (d) None of these
- (13) What is the approximate angle in facial scan technology is required whether in vertical or horizontal ?
- (a) 10 degree
  - (b) 15 degree
  - (c) 20 degree
  - (d) None of these
- (14) \_\_\_\_\_ technology is text dependent.
- (a) Voice scan
  - (b) Key stroke
  - (c) Gait recognition
  - (d) None of these
- (15) In retina recognition, template occupies approximately \_\_\_\_\_.
- (a) 96 bytes
  - (b) 10K bytes
  - (c) 100-200 bytes
  - (d) None of these

2. Attempt any **five** of the following :

15

- (1) What is hand geometry ? List the different applications of hand geometry.
- (2) Write short note on signature scan recognition.
- (3) Briefly explain smart card chips.
- (4) List the component of facial scan.
- (5) Explain level of fusion in multimodal biometric.
- (6) Briefly explain smart card production steps.

3. Attempt any **three** of the following : 15
- (1) What is multi model biometrics ? Explain it with suitable example.
  - (2) Discuss the disadvantages of facial scan.
  - (3) Differentiate : Retina identification Vs Voice Recognition.
  - (4) What is biometrics ? Explain traditional authentication method.
4. Attempt any **two** of the following : 15
- (1) What is facial scan technology ? List the different methods of facial scan. Explain any one of them with suitable example.
  - (2) What is accuracy in biometrics technology ? List and explain the different accuracy rates of it.
  - (3) Explain the working mechanism of retina technology.
5. Attempt any **one** of the following : 10
- (1) What is finger print identification ? List the different components of it. Discuss the advantages and disadvantages of the finger print.
  - (2) What is voice recognition ? List the different components of voice recognition, also discuss the advantages and disadvantage of it.
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**Time : 2½ Hours]****[Total Marks : 70****I. Answer the following multiple choice questions : (15)**

- (1) \_\_\_\_\_ is also called one to many match.
- (a) Identification (b) Verification  
(c) Can't say (d) None of these
- (2) Voice templates are occupy \_\_\_\_\_.
- (a) 2k (b) 3k  
(c) 11k (d) None of these
- (3) A typical fingerprint image may produce between \_\_\_\_\_ minutiae.
- (a) 10 - 20 (b) 15 - 50  
(c) 5 - 10 (d) 20 - 30
- (4) LFA stands for \_\_\_\_\_.
- (a) Local Feature Automation (b) Local Feature Automate  
(c) Linear Feature Analysis (d) Local Feature Analysis
- (5) The acquisition of a single retina image takes \_\_\_\_\_ under ideal conditions.
- (a) 1 to 1.5 seconds (b) 1 to 2 seconds  
(c) 4 to 5 seconds (d) None of these
- (6) Facial characteristics are \_\_\_\_\_.
- (a) distance between two eyes (b) distance between nose to eyes  
(c) jaw line (d) All of the above
- (7) Iris technology is more accurate than retina.
- (a) True (b) False  
(c) Can't say (d) None of these

- (8) In key stroke recognition, measurement on the basis of \_\_\_\_\_.
- (a) data (b) behavioural characteristics  
(c) (a) and (b) both (d) None of these
- (9) INCITS stands for \_\_\_\_\_.
- (a) Institute Commerce for Information Technology  
(b) Institute Committee for Information Technology  
(c) International Commerce for Information Technology  
(d) International Committee for Information Technology
- (10) How many types of smart card are available ?
- (a) two (b) three  
(c) four (d) five
- (11) In \_\_\_\_\_, Biomet partners was formed to develop a two device of hand reader.
- (a) 1992 (b) 1993  
(c) 1994 (d) 1995
- (12) In Iris recognition, a specialized camera, typically very close to the subject, not more than \_\_\_\_\_.
- (a) 2 feet (b) 3 feet  
(c) 4 feet (d) None of these
- (13) In face detection, processes are \_\_\_\_\_.
- (a) Image segmentation and color segmentation  
(b) Gender recognition  
(c) (a) and (b) both  
(d) None of these
- (14) The derived metrics \_\_\_\_\_.
- (a) EER (b) FNMR  
(c) (a) and (b) both (d) None of these
- (15) \_\_\_\_\_, template compared, \_\_\_\_\_ process of biometric system.
- (a) Match template, score compared  
(b) Match template. score generate  
(c) Create template, score compared  
(d) Create template, score generate

2. Attempt any **five** of the following : (15)

- (1) What is voice recognition ? List out performance factors of voice-scan.
- (2) Explain LFA in brief.
- (3) List out advantages and disadvantages of hand geometry.
- (4) Explain characteristics of gait recognition.
- (5) Write a note on physical access system.
- (6) Explain following terms :
  - (i) Verification
  - (ii) Feature extraction
  - (iii) Threshold

3. Attempt any **three** of the following : (15)

- (1) What is biometrics ? Explain tradition authentication methods.
- (2) Explain matching process in fingerprint recognition.
- (3) Explain kernel methods in facial scan technology.
- (4) What is multimodal biometrics ? Explain its levels.

4. Attempt any **two** of the following : (15)

- (1) Explain system model flow of biometrics technology.
- (2) How retina technology works ?
- (3) Explain different standards for iris technology.

5. Attempt any **one** of the following : (10)

- (1) List and explain different accuracy rates in biometrics technology.
  - (2) Explain facial scan advantages and disadvantages and its applications.
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