

**GUJARAT TECHNOLOGICAL UNIVERSITY****B.VOC - SEMESTER– VI EXAMINATION – WINTER 2023****Subject Code:1160204****Date:08-12-2023****Subject Name: Introduction to Biometrics****Time:02:30 PM TO 04:30 PM****Total Marks:50****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Define Biometrics. Explain requirements for Biometrics. **05**  
(b) Differentiate positive and negative identification system. **05**
- Q.2** (a) Explain Biometric System errors and evaluation. **05**  
(b) Explain algorithm for DNA matching. **05**
- OR**
- (b) Explain the concept of Retina Scan in detail. **05**
- Q.3** (a) Discuss and Compare Behavioral Biometrics and Physiological Biometrics. **05**  
(b) Draw and explain the architecture for Unimodal biometric systems with their advantages, disadvantages and limits. **05**
- OR**
- Q.3** (a) Discuss various modes of operation in multimodal biometric system. **05**  
(b) Draw and explain the architecture for Multimodal biometric systems with their advantages, disadvantages and limits. **05**
- Q.4** (a) Explain various Biometric pattern recognition methods. **05**  
(b) How to create biometric database? Explain with suitable example. **05**
- OR**
- Q.4** (a) Explain the elements to be consider in implementing the biometrics. **05**  
(b) If you have a school for Nursery students, then how you will design and implement one efficient biometric system. **05**
- Q.5** (a) Explain various data formats for Biometrics. **05**  
(b) Explain interoperability in Biometric System. **05**
- OR**
- Q.5** (a) Relate the support vector machines with biometric authentication systems. **05**  
(b) Explain quality control in Biometric System. **05**

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