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P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belagavi)
Seventh Semester, B.E. - Electronics and Communication Engineering
Semester End Examination; Jan. / Feb. - 2021
Biometrics

Time: 3 hrs   *Max. Marks: 100*

*Note: Answer **FIVE** full questions, selecting **ONE** full question from each unit.*

UNIT - I

1 a.	Explain enrollment and recognition process of Biometrics.	6
b.	How do we design a system for character recognition? Explain procedure and process step for the same.	7
c.	Define template. How do we use the templates in Biometric recognition?	7
2 a.	What are the advantages of Biometrics these days as compared to the earlier day's authentication system?	4
b.	Why is edge detection used and explain how this is achieved?	8
c.	What is Neural Network? How does it help in Pattern Matching techniques?	8

UNIT - II

3 a.	Explain enrollment and recognition stage of Face Biometrics.	8
b.	What are the difficulties of Iris Biometrics? What is the method used evaluate the performance of Iris Biometrics?	8
c.	What are the applications of Iris Biometrics?	4
4 a.	Explain Neural Network for Face recognition and explain its different training method.	7
b.	Explain the issue related to Face detection in the visual scene.	7
c.	Define Canny edge detection. Explain important arguments in edge detection process.	6

UNIT - III

5 a.	Explain Vein recognition system with the help of suitable block diagram.	8
b.	Briefly explain general architecture of hand geometry biometric system and explain stages involved in biometric recognition techniques.	6
c.	Explain Exterma detection stages of SIFT algorithm.	6
6 a.	Draw and explain various stages involved in ISL recognition system.	7
b.	How do we remove false minutiae and why?	7
c.	Explain briefly Fingerprint recognition system with the help of architecture diagram and list out important components of Fingerprint matching.	6

UNIT - IV

7 a. Classify the privacy issues related to deployment of Biometrics. 7

b. Explain different characteristics of multimodal Biometrics. 6

c. Explain how Fake identity claim as an attack in Biometrics? 7

8 a. Explain multimodal Biometrics system using Ear and Face. 7

b. Explain privacy concerns associated with Biometric technologies. 6

c. Compare various Biometrics in terms of privacy. 7

UNIT - V

9 a. Explain general watermarking process. 6

b. Explain Biometric standards for face images. 8

c. What are the expectations from Biometric technologies? 6

10 a. What are the desired characteristics of image watermarking? Explain any one. 6

b. Smart card biometrics is more advantages than traditional Smart cards. Justify. 6

c. Explain Biometric Interperability standards. 8

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