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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Sixth Semester, B.E. - Electronics and Communication Engineering

Semester End Examination; July / Aug. - 2022

Biometrics

Time: 3 hrs *Max. Marks: 100*

Course Outcomes

The Students will be able to:

CO1: Explain the basics of biometric modalities and features of the biometrics.
CO2: Apply the various morphological operations for feature extraction in various biometrics.
CO3: Analyze the use of various biometrics.
CO4: Understand the role of watermarking techniques in biometrics.
CO5: Summarize the privacy issues and concerns related to biometric cryptography.

***Note: I) PART - A** is compulsory. **Two** marks for each question.*
***II) PART - B**: Answer any **Two** sub questions (from a, b, c) for a Maximum of **18 marks** from each unit.*

Q. No.		Questions	Marks	BLs	COs	POs
		I : PART - A	**10**			
I	a.	List the applications of Biometrics in Travel and Immigration.	2	L1	CO2	PO2
	b.	Mention the different layers of Neural Network.	2	L1	CO1	PO1
	c.	Mention some level 1, level 2 and level 3 features of fingerprint.	2	L1	CO1	PO1
	d.	Define cryptanalysis.	2	L2	CO5	PO3
	e.	The frequency domain image water marking includes _____ and _____ techniques.	2	L1	CO4	PO2
		II : PART - B	**90**			
		UNIT - I	**18**			
1	a.	Explain general architecture of Biometrics systems with its main process explained in brief.	9	L2	CO1	PO1
	b.	Explain the basic process involved in Biometric template.	9	L2	CO2	PO2
	c.	Explain the character recognition process with flowchart and algorithm.	9	L2	CO1	PO1
		UNIT - II	**18**			
2	a.	Explain the design of face recognition system with neat block diagram.	9	L1 L2	CO2	PO2
	b.	List the challenges in face Biometric? Explain the steps involved in feature extraction.	9	L1 L2	CO2	PO2
	c.	Explain the parameters that are used as important arguments in edge detection process. Also explain the K-means clustering algorithm with necessary flow chart.	9	L2	CO2	PO2

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	UNIT - III	**18**			
3 a.	Explain the steps involved in vein pattern biometrics along with vein pattern Extraction process.	9	L2	CO2	PO2
b.	Discuss advantages and disadvantages of vein biometrics and fingerprint biometrics.	9	L2	CO3	PO3
c.	Discuss the major stages of SIFT algorithm with neat flow diagram.	9	L2	CO2	PO2
	UNIT - IV	**18**			
4 a.	Explain the general architecture of multimodal biometric system with neat block diagram.	9	L2	CO5	PO3
b.	Discuss the characteristics and advantages of multimodal Biometrics.	9	L2	CO1	PO1
c.	Explain the salient features used in AADHAAR Implementation.	9	L2	CO5	PO3
	UNIT - V	**18**			
5 a.	Explain general watermarking process with a flow diagram	9	L2	CO4	PO2
b.	Explain the characteristics and attacks on watermarking.	9	L2	CO4	PO2
c.	Explain the application of Biometrics in various fields.	9	L2	CO3	PO3

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