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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

July 2023 Semester End Main Examinations

Programme: B.E.

Semester: VIII

Branch: Institutional Elective

Duration: 3 hrs.

Course Code: 19ML8OE3BM

Max Marks: 100

Course: Biometrics

Date: 06.07.2023

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I			CO	PO	Marks
1	a)	Identify the key features of False Non-Match Rate.	<i>CO1</i>	<i>PO1</i>	05
	b)	Draw the basic building blocks of a generic biometric system and explain the sensor module of it.	<i>CO1</i>	<i>PO1</i>	10
	c)	Identify the five factors that must be addressed to gain thorough understanding of performance of a biometric system.	<i>CO1</i>	<i>PO1</i>	05
UNIT - II					
2	a)	Explain the Optical Frustrated Total Internal Reflection.	<i>CO2</i>	<i>PO2</i>	05
	b)	Identify the key features of Offline Sensing technique that is used to acquire fingerprints from a subject.	<i>CO2</i>	<i>PO2</i>	10
	c)	Explain the need of fingerprint synthesis.	<i>CO2</i>	<i>PO2</i>	05
OR					
3	a)	Explain any Live-scan sensing technologies.	<i>CO2</i>	<i>PO2</i>	05
	b)	With the help of flowchart, explain Minutiae matching algorithm.	<i>CO2</i>	<i>PO2</i>	10
	c)	Identify the challenges of matching palmprints.	<i>CO2</i>	<i>PO2</i>	05
UNIT - III					
4	a)	Write a short note on 3D sensors.	<i>CO2</i>	<i>PO2</i>	05
	b)	Explain the following heterogeneous face recognition techniques (i) Synthesis methods (ii) Feature based methods (iii) Prototype similarity methods	<i>CO2</i>	<i>PO2</i>	10
	c)	Identify the main features of Appearance based and Model based feature matching techniques.	<i>CO2</i>	<i>PO2</i>	05

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

UNIT - IV						
5	a)	Explain the main features of Posterior and Muscle layer of Iris.	<i>CO3</i>	<i>PO3</i>	05	
	b)	Draw the block diagram of Iris recognition system. Explain the acquisition module.	<i>CO3</i>	<i>PO3</i>	10	
	c)	Identify the challenges faced during Iris segmentation.	<i>CO3</i>	<i>PO3</i>	05	
UNIT - V						
6	a)	Differentiate between Contact and Contactless based image capture technique.	<i>CO3</i>	<i>PO3</i>	05	
	b)	Explain the different techniques of ear detection in a given image.	<i>CO3</i>	<i>PO3</i>	10	
	c)	Identify the challenges in Gait recognition.	<i>CO3</i>	<i>PO3</i>	05	
OR						
7	a)	Differentiate between Peg-based and Pegless image capture technique.	<i>CO3</i>	<i>PO3</i>	05	
	b)	Explain the various challenges faced in ear recognition.	<i>CO3</i>	<i>PO3</i>	10	
	c)	Identify how tattoo helps in victim and suspect identification.	<i>CO3</i>	<i>PO3</i>	05	
