

U.S.N.

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

Autonomous Institute Affiliated to VTU

## July 2023 Semester End Main Examinations

**Programme: B.E.**

**Branch: Institutional Elective**

**Course Code: 19ML8OE3BM**

**Course: Biometrics**

**Semester: VIII**

**Duration: 3 hrs.**

**Max Marks: 100**

**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.

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

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

\*\*\*\*\*