SRM Institute of Science and Technology
College of Engineering and Technology
School of Computing

| Mode of Exam |
| **OFFLINE** |

DEPARTMENT OF COMPUTING TECHNOLOGIES

SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamilnadu

Academic Year: 2032-2024 (ODD/EVEN)

Test: CLAT-3　　　　　　　　　　　　　　　　　　**Date: 9. 11.2023**
Course Code & Title:18CSE357T-Biometrics (Elective)　　　**Duration: 100 minutes**
Year & Sem: 3 & 4 Year/5 &7 Sem　　　　　　　　　　　**Max. Marks:** 50

Course Articulation Matrix: *(to be placed)*

Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15
CO1	3	3	3	3	-	-	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	3	-	-	-	-	-	-	-	-
CO3	3	2	2	2	-	-	2	-	-	-	-	-	-	-	-
CO4	3	2	2	2	-	3	2	3	-	-	-	-	-	-	-
CO5	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-
CO6	3	3	3	3	-	-	3	-	-	-	-	-	-	-	-

Part – A (10 × 1 = 10   Marks)
Instructions: Answer all

| Q. No	Question	Marks	BL	CO	PO	PI Code
1	It is a fact that a legitimate user denies using the system after having access to it? a. Intrusion b. Denial of Service c. Replay d. Repudiation **ANSWER D**	1	1	4	1	1.6.1*
2	Select among the following were the first biometric passport issued a. Singapore b. Japan c. Malaysia d. India **ANSWER C**	1	1	4	1	1.6.1
3	_____ is used for more effective Password Management in banking a. Internet Banking b. Mobile Banking c. Single Sign on d. Branch Banking **ANSWER C**	1	1	4	4	1.6.1
4	The interaction between the end user and a biometric system causes the capture of a biometric sample. Such a process is known as: a. Identity b. Live scan c. Live capture d. Mimic **ANSWER C**	1	1	4	2	1.6.1
5	Among the given options, what can be correctly referred to as a proprietary finger scanning method: a. Extraction	1	1	4	1	1.6.1

	b. Recognition c. Auto-correction d. Bifurcation **ANSWER D**					
6	Intrusion affects the basic _____ of a biometric system. a. Integrity b. Segmentations c. Edge d. Model **ANSWER A**	1	1	5	2	1.6.1
7	Which among the following were related Soft Biometrics a. Fingerprint b. Iris c. Signature d. Hair colour **ANSWER D**	1	1	5	2	1.6.1
8	Which is not a primary reason for using Biometric recognition a. Apprehend criminals b. Curtail financial fraud c. Secure national borders d. Authorize government resources **ANSWER D**	1	1	5	1	1.6.1
9	A security threat in a biometric system leads to _____ a. System Resume b. System failure c. System restarts d. System shutdown **ANSWER B**	1	1	5	1	1.6.1
10	_____ is used for employee access control and passengers facing implementations a. Hand Scan Technology b. Facial sensor c. Fingerprint sensor d. Iris sensor **ANSWER A**	1	1	5	2	1.6.1
Part – B (5× 2 = 10 Marks) Instructions: Answer any five						
11	**Define collusion.** This refers to the scenario where an authorized user willingly turns malicious and attacks the biometric system either individually or in collaboration with external adversaries (possibly in return for monetary gain).	2	1	4	2	1.6.1
12	**What is hill climbing attack?** Hill-climbing attack is specific to the link between the sensor and feature extractor or the link between the feature extractor and matcher where an artificially generated biometric sample or feature set is first introduced into the system and the response (match score) is noted.	2	1	4	2	1.6.1
13	**Explain key binding cryptosystem.** key binding cryptosystem, the biometric template is secured by monolithically binding it with a secret key within a cryptographic framework.	2	2	4	2	1.6.1
14	**List the types of Automation** 1.industrial 2. Scientific 3. light	2	2	5	3	1.6.1

	4. Building					
15	**Describe programmable logic controller.** PLC is a digital computer designed for multiple inputs and output arrangements ▪ it has input lines where sensors are connected to notify upon events ▪ and output lines to signal any reaction to the incoming events ▪ uses a programmable memory to store the instructions	2	3	5	3	1.6.1
16	**List AV fusion methods.** 1.Pre-mapping fusion 2. Midst-mapping fusion 3. Post-mapping fusion	2	2	5	3	1.6.1
	Part – C (15× 2 = 30 Marks) **Instructions: Answer all**					
17	**How do you achieve Identity Authentication based on Audio Visual Biometric? Explain** AV person recognition is one of the most promising user-friendly low-cost person recognition technologies that is rather resilient to spoofing. Importance Face visibility benefits speech perception. • There exists a strong correlation among face motion, vocal tract shape, and speech acoustics. • Plays an important part in the development of human– computer interaction (HCI) systems. ➢ Block diagram The AV person recognition system consists of three main blocks: 1. pre-processing 2. feature extraction and 3. AV fusion	15	3	4	3	1.6.1
	(or)					
18	**Depict the Gesture Interpretation in Biometric system. Describe its types? Explain the algorithms used for Gesture interpretation** Gestures can originate from any bodily motion or state but commonly originate from the face or hand.. Users can use simple gestures to control or interact with devices without physically touching them. Gesture recognition can be seen as a way for computers to begin to understand human body language. Types: 1.Offline Gestures 2 Online Gestures Algorithms 1.3D model based 2 .Skeletal based 3 . Appearance based models	15	4	4	3	1.6.1
19	**Summarize the challenges for designing a Biometric system for Military Application? Explain in detail** It is found that the demands placed on its biometric systems by the military were far tougher than the commercial world and came up with innovative solutions to the challenges presented. • For example, capturing iris prints outdoors in the Middle East on a hot, sunny day was difficult as the individuals tended to squint. • Whereas historically iris capture is carried out at a distance of about 20 inches so your irises are in the open, we re-engineered the system so you put your eyes up to what looks like a set of binoculars. That encloses your eyes from the light and we get a really good capture of the irises.	15	4	5	3	1.6.1
	(or)					

| 20 | Discuss various Fusion Strategies and their applications with suitable architectures | 15 | 3 | 5 | 3 | 1.6.1 |

*Performance Indicators are available separately for Computer Science and Engineering in AICTE examination reforms policy.

Course Outcome (CO) and Bloom's level (BL) Coverage in Questions

CO Coverage %

BL Coverage in %
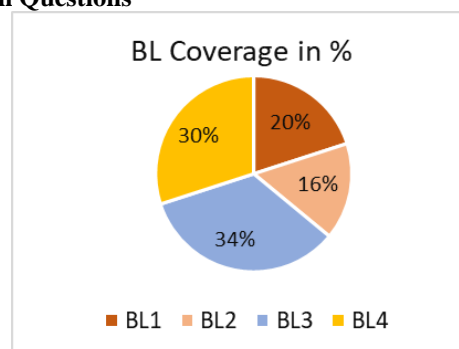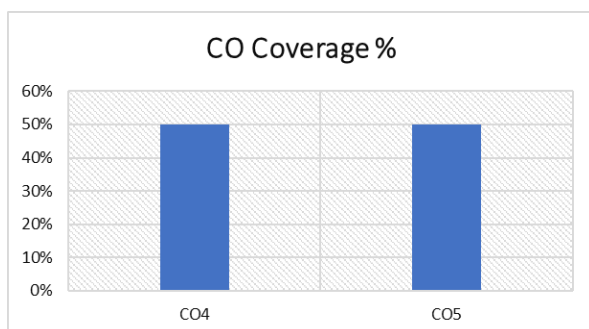
Approved by the Audit Professor/Course Coordinator