Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Eighth Semester B.Tech Degree (R, S) Examination May 2024 (2019 Scheme)

Course Code: CCT402

Course Name: BIOMETRIC SECURITY

Max. Marks: 100 **Duration: 3 Hours**

PART A

Answer all questions, each carries 3 marks. Marks

1		Explain key biometric processes.	(3)
2		Compare Verification and Identification in a biometric system.	(3)
3		How indexing is done in Fingerprint Biometrics?	(3)
4		List five stages of Fingerprint technology.	(3)
5		What are the features of a heterogeneous face recognition system?	(3)
6		List the strength and weakness of Facial scan.	(3)
7		List the challenges faced in ear recognition	(3)
8		What is iris normalization?	(3)
9		Write down any three biometric standards.	(3)
10		What is an adversary attack?	(3)

PART B

Answer any one full question from each module, each carries 14 marks.

Module I

11	a)	Explain different applications of a Biometric system.	(8)
	b)	Explain how biometrics can be used in Identification.	(6)

OR

12	a)	What is the need of a Biometric system? How is biometric matching done?	(6
	b)	Explain 1) False Match Rate, 2) Failure-to-Enroll Rate (FTE), 3) Equal Error Rate (ERR), 4) Ability-to-Verify Rate (ATV).	(8)

Module II

13	a)	Describe the different Friction ridge patterns.	(6)
	b)	Explain how fingerprint technology works.	(8)

OR

14	a)	List and explain different Competing Finger-Scan technologies.	(9)
	b)	Explain the method of synthesis used in fingerprint biometrics.	(5)

Module III

15	a)	Differentiate between Signature Scan and Keystroke scan.	(6)
	b)	Show how feature extraction is done in Face Recognition.	(8)

OR

16	a)	Describe keystroke scan components working principle.	(4)
	b)	How PCA (Principal Component Analysis) is typically applied in the context of face recognition	(10)

Module IV

17	a)	Explain design of an Iris recognition system.	(9)
	b)	Show how quality assessment is done for an Iris Scan biometric system	(5)

OR

18	a)	How iris encoding and iris matching process takes place.	(6)
	b)	Explain different iris segmentation techniques.	(8)

Module V

19	a)	List and explain different attacks at the user interface.	(9)
	b)	Explain different counter measures that can be implemented to mitigate the risk of impersonation	(5)

OR

20	a)	What is biometric processing? List some of the attacks that can be made on biometric Processing.	(6)
	b)	How human interactions can be exploited in the security of a biometric system.	(8)

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