SRM Institute of Science and Technology
College of Engineering and Technology
School of Computing
DEPARTMENT OF COMPUTATIONAL INTELLIGENCE
SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamilnadu
Academic Year: 2022-2023(ODD)   **SET A**

Mode of Exam
OFFLINE

Test: CLAT- 3   **Date: 05.05.2023**
Course Code & Title: 18CSE481T / Applied Machine Learning
Duration: 2 periods
Year & Sem: III & 6th sem   **Max. Marks:** 50

Course Articulation Matrix:

S.No.	Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14
1	CO1	H	M	H	-	H	-	-	-			H	H	H	H
2	CO2	H	M	H	-	H	-	-	-			H	H	H	H
3	CO3	H	M	H	-	H	-	-	-			H	H	H	H
4	CO4	H	M	H	-	H	-	-	-			H	H	H	H

Answer all	Part – A			(10 x 1 = 10 Marks)

Q. No.	Question	Marks	BL	CO	PO	PI Code
1	Gradient magnitude images are more useful in _____. a. Point detection b. Area detection c. Line detection d. Edge detection	1	1	3	3	2.2.1
2	Sobel gradient is not that good for detection of _____ a. Horizontal lines b. Vertical lines c. Diagonal lines d. Edges	1	1	3	3	2.2.1
3	For diagonal edge detection we use 2D mask of _____ a. Sobel gradient b. Robert cross gradient c. Cross gradient d. Prewitt gradient	1	1	3	3	2.2.1
4	The function changing the shape is called _____ a. Scaling function b. Shaping function c. Down sampling d. Blurring	1	2	3	3	2.2.1
5	A histogram is to be drawn for following frequency distribution Class Interval: 5-10, 10-15, 15-25, 25-45, 45-75 Frequency: 6, 12, 10, 8, 15 The adjusted frequency for class interval 15-25 will be: a. 2	1	2	3	3	2.2.1

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	b. 5 c. 3 d. 4					
6	Biometrics is used for _____ a person. A. authenticating B. authorizing C. authenticating and authorizing D. identifying and verifying	1	1	4	4	3.2.1
7	_____ is a digital reference of the distinct characteristics that are extracted from a biometric sample. A. Candidate/Subject B. Enrollment C. Biometric Template D. False Acceptance Rate	1	1	4	4	3.2.1
8	Principal Component Analysis is an example of _____ a) Supervised Learning b) Unsupervised Learning c) Semi-Supervised Learning d) Reinforcement Learning	1	2	4	4	3.2.1
9	Following the steps to run a PCA's algorithm, why is so important standardize your data? a. Make the training time more fast b. Standardize data allows other people understand better your work c. Find the features which can best predicts Y d. Use the best practices of data wrangling	1	1	4	4	3.2.1
10	Identify the Wrong statement for PCA. a. It focuses on the mutual orthogonality property of the principal components. b. It doesn't focus on the mutual independence of the components. c. It focuses on minimizing the variance. d. It focuses on maximizing the variance.	1	1	4	4	3.2.1

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Answer all		**Part – B**	**Answer any 4**			
	(4 x 5 = 20 Marks)					

Q. No.	Question	Marks	BL	CO	PO	PI Code
11	Brief about how images are stored in computer. Give an example.	5	2	3	3	2.2.3
12	Illustrate feature map with an example.	5	3	3	3	2.2.3
13	Brief about Scale Invariant Feature transform processing steps with an example.	5	3	4	4	3.2.2
14	List the advantages of SIFT. Find the integral image for the below original image.	5	2	4	4	3.2.2
15.	Identify whether edge is present or not in the following example with the Haar feature.	5	2	4	4	3.2.2

Answer all	**Part – C**		**(2 x 10 = 20 Marks)**

Q. No.	Question	Marks	BL	CO	PO	PI Code
16 (a)	Explain all the Gradient-based edge detection techniques with examples.	4+4+4	3	3	2.2.4	2.2.4
	(OR)					
16 (b)	Explain the use of Histogram Equalization. Perform histogram equalization on the following 8 X 8 image. The gray level distribution of the image is given below.	4+8				

Gray Level	0	1	2	3	4	5	6	7

	(r$_k$)												
	Frequency (p$_k$)	2	4	6	8	10	12	14	16				

17 (a)	Explain all the processing steps in facial biometric recognition system. **(OR)**	12	3	3	3	3.2.3
17 (b)	Brief about the steps in PCA to reduce the dimensions of the data set. Find the eigen values and eigen vectors for the given data set. (4 + 8)	4+8	3			

X	2.5	0.5	2.2	1.9	3.1	2.3	2.0	1	1.5	1.1
Y	2.4	0.7	2.9	2.2	3.0	2.7	1.6	1.1	1.6	0.9

*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
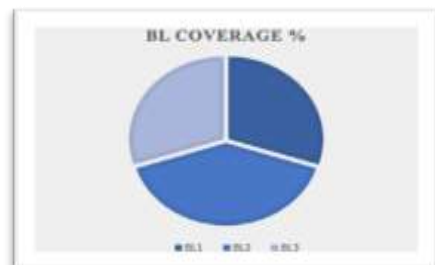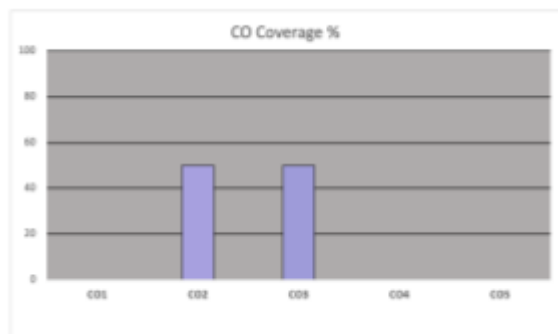
Approved by the Audit Professor/Course Coordinator