Candidate seat No: _____

Charotar University of Science and Technology [CHARUSAT]
Faculty of Technology and Engineering
Devang Patel Institute of Advance Technology and Research
CE379: IMAGE PROCESSING AND COMPUTER VISION(PE-II)
Unit Test - I

Semester: 6th Sem. B. Tech. (CE) **Maximum Marks: 30**
Date: 13/03/2023 (Monday) **Time: 09:15 a.m. to 10:15 a.m.**

Instructions:
(i) Attempt ***all*** the questions.
(ii) Figures to the right indicate ***full*** marks.
(iii) Make suitable assumptions and draw neat figures wherever if required.

Q -1 Answer the following questions. **[30]**

CO - 1	U	1.	What is meant by illumination and reflectance? How both of these are important for image capturing?	02
CO - 1	R	2.	Discuss the image acquisition using a single sensor, sensor strips and sensor arrays.	03
CO - 1	A	3.	Draw the Fourier transformation for the given Composite Signal(Y). Consider X = [5*-π to 5* π] Y = sin(30*X) +sin(60*X) +sin(90*X)	05
CO - 1	R	4.	Explain Following terms with example. • Image translation • Scaling • Image Rotation	03
CO - 2	A	5.	What is log transformation? What will be the output image matrix after applying 3times Log transformation on the given image IMG1? Generate Negative of IMG1.	04

8	4	6	5
7	2	6	4
3	2	4	1
5	6	5	6

IMG1

CO - 2	R,A	6.	Differentiate Contrast Stretching and Gray Level Slicing. Perform Contrast Stretching and Gray Level Slicing on IMG1.	04
CO - 2	A	7.	What will be the out matrices by applying following filters on IMG1. • Mean • Median • Weighted Average • Laplacian	04

CO - 2 C 8. Write down MATLAB code for histogram equalization. Perform histogram equalization on below given image. 05

3	4	6	5
4	2	1	3
7	2	4	1
5	6	3	7

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