

## COMPENSATION TEST

## CSPE 74 - IMAGE PROCESSING AND ITS APPLICATIONS

Max: 20 marks

28/10/25

TIME: 60 Mins

ANSWER ALL THE QUESTIONS

1. Explain the concepts of image sampling and quantization and their significance in digital image processing with a neat sketch. (3)
2. Given a square object with coordinate points A(0, 3), B(3, 3), C(3, 0), D(0, 0). Apply the scaling parameter 2 towards X axis and 3 towards Y axis and obtain the new coordinates of the object. (2)
3. Perform Histogram equalization for the given image. Draw the histogram of the image before and after equalization

1	5	2	4
3	1	2	2
4	2	2	5
2	3	5	2

6.175  
1.85
(4)

4. What is image enhancement? (1)
5. Apply Arithmetic mean, Geometric mean and Harmonic mean operations on the following image.
- |   |   |   |
|---|---|---|
| 1 | 7 | 5 |
| 6 | 2 | 3 |
| 1 | 4 | 2 |
- $\frac{9}{4}$
- (3)
6. Explain the image degradation and restoration process in detail. (2)
7. Compress the following image using Huffman coding.

7	7	3	1	1
6	2	3	1	1
4	3	0	0	7
3	4	3	3	4
5	5	6	2	2

(5)