Subject: Digital Image Processing (MCA E-509)

Time: 3H   MM: 70

Section-A
Attempt any FIVE questions out of TEN. Each question carries 6 marks.

Q1. What do you mean by Digital Image? Explain the concept of RBG.   6
Q2. What is 2D image? Differentiate between Traditional and Digital Image Processing.   6
Q3. What is Image Transformation? Give an example of it.   6
Q4. Explain the image restoration model.   6
Q5. What do you mean by Image Enhancement? Give an example of it.   6
Q6. Explain the role of image processing in agriculture.   6
Q7. What is median filtering?   6
Q8. Explain the methods of thresholding for image segmentation.   6
Q9. What is smallest unit of image? Explain with example.   6
Q10. Explain the image degradation and restoration model.   6

Section-B
Attempt any FOUR questions out of EIGHT. Each question carries 10 marks.

Q1. Write down short notes on the following: 10
    (a) Visualization
    (b) Recognition
    (c) Sharpening
    (d) Restoration
    (e) Retrieval
Q2. What is Image Analysis life cycle? Explain the fundamental of image analysis.   10
Q3. Why does image is a good source of information?   10
Q4. What are the major application areas of Image Processing?   10
Q5. What is image Enhancement? Perform the histogram equalization for an 8x8 image shown below: 10

Gray Level	0	1	2	3	4	5	6	7
No. of Pixels	9	8	11	4	10	15	4	3

Q6. What is a filter? Let I = {0, 0, 1, 0, 0} be an image. Using the mask K = {3, 2, 8}, perform the convolution.   10
Q7. What is Point Operation? Perform the Digital Negative operation on the given image.   10

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

Q8. Differentiate between Contrast Stretching and Intensity Level Slicing. Find the Contrast Stretching of the image matrix as given Q7.   10