Exam. Code : 208602
Subject Code : 4750

M.Sc. Information Technology 2nd Sem.
(Batch 2021-23)
IMAGE PROCESSING
Paper : MIT-203

Time Allowed—3 Hours] [Maximum Marks—100

Note :— Attempt ***five*** questions in all, selecting at least **one** question from each section. The **fifth** question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. (a) Discuss different components of Image Processing System in detail. 10

   (b) Explain how Fourier transforms are useful in digital image processing. Differentiate between FT, Discrete FT and Fast FT. 10

2. (a) Explain Histogram processing technique in Image Processing. 10

   (b) What do you understand by Image Sharpening ? Discuss how High Pass Filtering helps in enhancing the image. 10

SECTION—B

3. (a) What do you understand by the term Image Restoration ? What are the different ways of Image Restoration ? Explain any one in detail. 10

   (b) Explain the concept of Quantizer and Coder in Image Restoration. 10

4. Explain the process of detection of discontinuation by point detection, line detection and edge detection with the help of an example. 20

SECTION—C

5. (a) What is thresholding ? Explain about global thresholding by citing an example. 10

   (b) How Median Filtering works in Image Processing ? 10

6. (a) Explain the concept of thresholding method and in iterative method with respect to Inverse Filtering. 10

   (b) The Wiener filtering executes an optimal tradeoff between inverse filtering and noise smoothing. Explain. 10

SECTION—D

7. (a) What is spatial feature extraction in image processing ? Explain with example. 10

   (b) What is region and boundary in image processing ? Explain citing example. 10

8. Explain the following concepts using suitable examples :

   (a) Image Segmentation

   (b) Texture Analysis. 2×10=20