5. (a) Explain the concept of Global Thresh - holding by citing an example.

(b) How Gradient Filtering works in Image Processing ?

6. Explain the concept of Wiener Filtering. What are the advantages of Wiener Filter over Inverse Filter ?

7. Explain the following :

(a) Spatial Feature Extraction

(b) Boundary Extraction.

8. (a) How features are extracted from an Image ? Explain.

(b) Define the term Image Segmentation. Explain Region-based segmentation.

M.Sc. Information Technology 2nd Semester
IMAGE PROCESSING
Paper : MIT-203

Time Allowed—2 Hours]   [Maximum Marks—100

Note :— There are **Eight** questions of equal marks. Candidates are required to attempt any **Four** questions.

1. Define the term Image Processing. Explain different steps used in Image Processing. Also discuss different components of Image Processing System.

2. (a) Explain how Fourier transforms are useful in digital image processing. Also explain the properties of Fourier transform.

(b) What do you understand by Image Smoothing ? Discuss how Low Pass Filtering helps in smoothing the image.

3. (a) What is the need for Image Restoration ? Explain Image restoration process.

(b) What is Gray Level Interpolation ? Explain the schemes involved in it.

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