Exam. Code   : 206702
Subject Code :   4101

M.Sc. Computer Science 2nd Semester
IMAGE PROCESSING
Paper—MCS–202

Time Allowed—3 Hours]   [Maximum Marks—100

Note :– Attempt **five** questions, selecting at least **one** question from each Section.

SECTION–A

1. Explain the term Digital Image Representation. How one can classify the image ? Discuss the fundamental steps involved in Image Processing.   20

2. What are the components of Digital Image Processing ? Discuss in detail.   20

SECTION–B

3. (a) Explain Human Visual System model. Describe its properties.   10

    (b) What is the imaging system specification required for the desired quality of a digital image ?   5

    (c) Write five data formats used to store images.   5

4. (a) Explain the process of Image Sampling and Quantization using different sensor arrangements.   10

(b) Briefly explain :

    (i)   Image Signal Representation.   5

    (ii)   Image Data Formats.   5

SECTION–C

5. (a) What are the different types of mean filters used for noise reduction ? Explain.   10

    (b) Explain about image restoration using minimum mean square error filtering.   10

6. What do you understand by Image Data Compression ? What are the various techniques used for this purpose ? Explain any one in detail.   20

SECTION–D

7. (a) What do you understand by Color Image Processing ? How one can classify the color models ?   10

    (b) Explain the concept of Color Quantization using suitable algorithm used for it.   10

8. (a) Discuss about noise in color images.   10

    (b) Explain the procedure of converting colors from HIS to RGB.   10