

CBCS SCHEME

USN

1 A M 2 0 M T 4 0 1

18MT744

Seventh Semester B.E. Degree Examination, Jan./Feb. 2023 Digital Image Processing

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. What are the fundamental steps in Digital Image Processing? (10 Marks)
b. Explain the image formation in the Eye with a neat diagram. (10 Marks)

OR

- 2 a. What are the components of an Image Processing system. (10 Marks)
b. Explain Brightness adaptation and Discrimination with a neat diagram. (10 Marks)

Module-2

- 3 a. Explain image Acquisition using a single sensor with a neat diagram. (10 Marks)
b. Explain about the basic relationship and distanced measures between pixels in a digital image. (10 Marks)

OR

- 4 a. Explain image acquisition using sensor strips with a neat diagram. (10 Marks)
b. Explain about image sampling and Quantization process. (10 Marks)

Module-3

- 5 a. Derive two dimensional orthogonal and unitary transform. (10 Marks)
b. Describe Hear transform and its properties. (10 Marks)

OR

- 6 a. Derive two dimensional discrete Fourier transform. (10 Marks)
b. Describe Hadamard transform and show Hadamard transform for $n = 3$. (10 Marks)

Module-4

- 7 a. Explain power law transformation and image Negatives. (10 Marks)
b. Write about Histogram Equalization. (10 Marks)

OR

- 8 a. Explain about contrast stretching and gray level slicing. (10 Marks)
b. Discuss the frequency domain techniques of image enhancement in detail. (10 Marks)

Module-5

- 9 a. With a block diagram, explain the model of image degradation/Restoration process. (10 Marks)
b. Describe the RGB color Model with a diagram. (10 Marks)

OR

- 10 a. Explain Meanfilters in detail. (10 Marks)
b. Explain Pseudo color image processing. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.