

1059

B. Engg. (Information Technology)

8th SemesterITE-841: Digital Image Processing

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Q. No. 1 which is compulsory and selecting atleast two questions from each Unit.

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I. Attempt the following: -

- a) What is the difference between image restoration and image enhancement?
- b) What are steps involved in digitization of images?
- c) Define Fourier transform and its application.
- d) Explain the concept of Hough Transform.
- e) What is thresholding? (5×2)

UNIT-I

- II. (a) Explain the various color models in detail.
- (b) Explain and differentiate different fitters in frequency domain. (4+6)
- III. (a) Explain the noising and denoising process in image.
- (b) Explain about spatial domain fittering.
- (c) Explain about smoothing and sharpening fitters. (4+2+4)

IV. Write short notes on the following: -

- (a) Image degradation and restoration process
- (b) Homomorphing fittering
- (c) Color transforms
- (d) Wavelet transforms (10)

UNIT-II

- V. (a) Why is Zig-Zag scanning preferred in JPEG standard? What are the various principal modes of JPEG?
- (b) Obtain the Huffman code for the word 'INDIAN'. (6+4)

Contd.....P/2

(2)

VI. Write short notes on the following: -

- (a) Lossy compression techniques
- (b) Patterns and patterns classes
- (c) Huffman coding
- (d) Image segmentation

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VII. (a) What are the approaches for object recognition?

(b) What are the various types of data redundancies?

(c) What are boundary descriptors and regional descriptors?

(4+3+3)

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