

Exam.Code:0932

Sub. Code: 6921

1058

B.E. (Electronics and Communication Engineering)

Eighth Semester

Elective – II & III

EC-808: Digital Image Processing

Time allowed: 3 Hours

Max. Marks: 50

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

x-x-x

I. Attempt the following:-

- a) Define an Image.
- b) What are the factors that affect the quality of images during acquisition?
- c) Define Sampling.
- d) What is stereo imaging?
- e) What is the advantage of image processing in frequency domain over spatial domain?
- f) Give any application of image subtraction.
- g) How can we interpret the quality of an image from its histogram?
- h) Discuss Walsh Transform.
- i) How is Coding redundancy different from Inter-pixel Redundancy?
- j) Name any four compressed image formats. (10x1)

UNIT – I

- II. a) Explain the various steps in image processing using suitable examples. Also discuss some key applications of image processing.
b) Explain Sharpening Filters. (2x5)
- III. a) How images are stored inside the computers? What are the main properties of the images?
b) How images can be smoothened? Compare median and averaging filters. (2x5)
- IV. a) What are additive and subtractive colour models? Explain with suitable examples.
b) How is histogram useful for image processing? Differentiate between histogram stretching, equalization and matching. (2x5)

P.T.O.

(2)

UNIT - II

- V. a) What is the purpose of using orthogonal transformation? Explain briefly the use of Haar and Slant Transformation.
- b) What are Lossy Compression techniques? Do we lose data or information in these techniques? (6,4)
- VI. a) Explain the use of Fourier transform on images. Describe its properties in detail. What changes are made in Fast Fourier Transforms?
- b) 'Explain the Variable-Length Coding in detail. (6,4)
- VII. Write short notes on:-
- a) Psychovisual Redundancy,
- b) Image Compression Standards &
- c) Bit-Plane Coding. (3,3,4)

x-x-x