

2/2 / MLE

Re-appeal

(Master Copy)

Exam.Code:1000
Sub. Code: 7303

2014
M.E. (Computer Science and Engineering)
Second Semester
CS-8201: Digital Image Processing

Time allowed: 3 Hours

Max. Marks: 50

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

x-x-x

- I. Write short answers of the following:
- Differentiate between image enhancement and image restoration.
 - What is the limiting effect of repeatedly eroding an image? Assume that a trivial (one point) structuring element is not used.
 - What are linear and non-linear spatial filters? Give example.
 - What is sampling and quantization?
 - What do you mean by histogram equalization? (5×2=10)

Section-A

- II.
 - What is spatial filtering? Describe in detail the working of order-statistics filters.
 - What is Fourier transform? What is its role in image processing? Describe in brief important properties of two-dimensional Fourier transform. (5,5)
- III.
 - Describe in brief Homomorphic filtering. What are the advantages of using it?
 - What is noise? What are the various sources of image noise? How are noises classified? (5,5)
- IV.
 - Explain in detail three different types of redundancies encountered in an image with suitable illustrative examples.
 - Describe in detail Huffman coding approach along with its salient features (5,5)

Section-B

- V.
 - Explain the thresholding approach of segmenting an image.
 - Distinguish between global, local and dynamic thresholding. (5,5)
- VI.
 - Explain in detail any two boundary representation schemes with illustrative examples.
 - Describe edge linking and boundary extraction procedure in detail. (5,5)
- VII.
 - With the help of an example, describe in detail dilation, erosion, opening and closing morphological operations.
 - Describe in detail object recognition based on decision theoretic methods. (5,5)

x-x-x