

8/2

Exam.Code:0926
Sub. Code: 6551

2014
B.E. (Information Technology)
Eighth Semester
IT-801: 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. Answer the following:-

- a) Explain the concept of sampling and quantization.
- b) What is the difference between low pass filter and high pass filter?
- c) List down the limitations of Huffman coding.
- d) What is inverse filtering?
- e) What is coding, interpixel and psycho-visual redundancy? (5x2)

UNIT - I

II. a) Explain the fundamental steps of image processing. What are the reasons of having checkboard effect and false contouring?

b) Explain CMY and CMYK colour model. (6,4)

III. Write short notes on the following:-

- a) Homomorphic filtering
- b) Image restoration
- c) Noise models
- d) Wavelet transforms (10)

IV. a) Discuss the pros and cons of spatial domain filtering techniques and frequency domain filtering techniques.

b) Explain the components of digital image processing. (6,4)

UNIT - II

V. a) Explain region splitting and merging in image segmentation.

b) What is coding system in JPEG? Explain it. (2x5)

P.T.O.

(2)

VI. Write short notes on the following:-

- a) Boundary and region descriptors
- b) Hough transforms
- c) Huffman coding
- d) Object recognition

(10)

VII. Define the term pattern and pattern classes. How is recognition based on decision theoretic approaches performed? Describe by taking suitable example. (10)

x-x-x