EC415(A)

Hall Ticket Number:

IV/IV B.Tech (Regular) DEGREE EXAMINATION

OCTOBER, 2016 — **Electronics and Communication Engineering**

Seventh Semester — **Digital Image Processing**

Time: Three Hours — **Maximum :** 60 Marks

Answer Question No.1 compulsorily. (1X12 = 12 Marks)

Answer ONE question from each unit. (4X12=48 Marks)

1. Answer all questions (1X12=12 Marks)

a Define Digital Image.
b Give any two examples for short term storage devices.
c Define sampling and quantization.
d What is image negative transform.
e Define normalized histogram.
f Write any two properties of 2-D Fourier Transform.
g Give any two examples of lossy and lossless compression techniques.
h Expand JPEG and MPEG.
i Name few image representation schemes.
j Give the advantages of using Wiener Filters.
k Define thresholding.
l Differentiate boundary and regional descriptors.

UNIT – I

2.a Explain about fundamental steps of Digital Image Processing 6M
2.b Write about brightness adaption and discrimination. 6M

(OR)

3.a Write about the elements of HVS with neat sketches. 6M
3.b How do you digitize the given image. Explain ? 6M

UNIT – II

4.a Discuss about smoothening and sharpening techniques. 6M
4.b Write about various gray level transformations. 6M

(OR)

5.a Define Histogram and explain about histogram based techniques in image enhancement. 6M
5.b What are the needs of image transformation and explain any three properties of 2-D Fourier Transform 6M

UNIT – III

6.a How to reduce periodic noise by using frequency domain filtering. 6M
6.b Explain about Inverse and Wiener Filtering techniques. 6M

(OR)

7.a What is huffman coding of images? Explain? 6M
7.b Differentiate Lossy and Lossless Image compression techniques. 6M

UNIT – IV

8.a What is meant by image segmentation. Explain segmentation based on discontinuities. 6M
8.b Explain the following (i) Chain codes (ii) Thresholding 6M

(OR)

9.a Write a short note on boundary and regional descriptors. 6M
9.b Explain about edge linking and boundary detection with relative example. 6M