Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 83099

M.E. DEGREE EXAMINATION, JANUARY 2014.

Elective

Computer Science and Engineering

CP 7004 — IMAGE PROCESSING AND ANALYSIS

(Common to M.E. Computer Science and Engineering (with Specialization in Networks))

(Regulation 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Image Quantization.

2. What is spatial filtering? When is it used?

3. Write the expression of one dimensional Discrete Fourier Transform (DFT).

4. What are the properties of Haar transform?

5. What is region growing? Give illustrations.

6. Why edge detection is most common approach for detect discontinuities?

7. What is meant by contour? Give Illustrations.

8. What is meant by dilation and erosion?

9. List some color transformation techniques.

10. How digital image water marking is done?

PART B — (5 × 16 = 80 marks)

11. (a) Write notes on followings :

(i) Image File formats. (8)

(ii) Image sensing and acquisition. (8)

Or

(b) Illustrate various fuzzy techniques for spatial filtering.

12. (a) Explain the Fourier Transform (FT) in one and two dimension.

Or

(b) Discuss on Wavelets transforms in one dimension. How can they be used for image processing? (12 + 4)

13. (a) What is thresholding? Explain threshold selection in image segmentation. (2 + 14)

Or

(b) Describe various edge detection operators.

14. (a) What is the function of Harris operator? Describe Harris interest point operator in point detection. (2 + 14)

Or

(b) Give notes on the following :

(i) Grayscale morphology. (8)

(ii) Laws texture energy approach. (8)

15. (a) (i) What is meant by Color Image Smoothing? Explain. (8)

(ii) What is meant by Color Image Sharpening? Explain. (8)

Or

(b) What is Image compression? What are the image compression methods available? Explain with example. (3 + 3 + 10)

———————