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

Question Paper Code: 52305

M.E. DEGREE EXAMINATION, MAY 2017

Elective

Computer Science and Engineering

15PCS513 - IMAGE PROCESSING AND ANALYSIS

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Quantitatively, spatial resolution cannot be represented as

   (a) line pairs (b) pixels (c) dots (d) none of these

2. 2D Fourier transform and its inverse are infinitely

   (a) aperiodic (b) periodic (c) linear (d) non linear

3. Second derivatives in image segmentation produce

   (a) thick edges (b) thin edges (c) fine edges (d) rough edges

4. Closing is represented by

   (a) A .B (b) A+B (c) A-B (d) AxB

5. Full color image is a

   (a) 20 bit image (b) 24 bit image (c) 28 bit image (d) 32 bit image

PART - B (5 x 3 = 15 Marks)

6. Define digital filter.

7. Define fast fourier transform.

8. Which derivative is suitable for analyzing the strength of an edge? Justify?

9. Why is autocorrelation employed in texture analysis?

10. Differentiate Steganography and watermarking.

PART - C (5 x 16 = 80 Marks)

11. (a) Assume that you are employed in a medical imaging centre. Discuss the modalities of images to be captured relevant to different organs and internal functions. (16)

Or

(b) Explain the noise models in image processing with neat diagrams. (16)

12. (a) Explain subband decomposition in detail. (16)

Or

(b) Explain fast fourier transforms in detail. (16)

13. (a) Explain active contours in detail with neat diagrams. (16)

Or

(b) Explain the steps involved in canny edge detection with neat diagrams. (16)

14. (a) Discuss the Gray scale morphology in detail. (16)

Or

(b) Discuss the role of gray scale co-occurrence matrices in texture analysis. (16)

15. (a) Discuss various color models in detail. (16)

Or

(b) Explain LZW and Golomb coding in detail. (16)