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Question Paper Code : 51979

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2014.

Sixth Semester

Medical Electronics Engineering

BM 3314/080290042 — DIGITAL IMAGE PROCESSING

(Regulation 2008)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Contrast and Hue.

2. What is HSI model?

3. List the properties of Haar transform.

4. Write the expression for 2D DFT.

5. What is the use of wiener filtering?

6. Draw the image degradation model.

7. Write the perwitt and sobel masks for detecting diagonal edges.

8. What are chain codes?

9. What is meant by image compression?

10. State the principle of LZW coding.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the steps in digital image processing. (8)

(ii) Write about Mach band effect and RGB model. (8)

Or

(b) Describe the basic concepts in sampling and quantization. How to represent a digital image? (16)

12. (a) Explain in detail about discrete cosine transforms and its properties.

Or

(b) Explain Hadamard transform and discrete sine transform and its properties.

13. (a) Describe in detail about histogram modification and specification techniques.

Or

(b) Explain the constrained and unconstrained image restoration.

14. (a) Explain any one edge detection algorithm and region based segmentation method.

Or

(b) Explain different techniques of image representation, boundary descriptor and regional descriptors. (16)

15. (a) Explain in detail the transform based image coding technique. (16)

Or

(b) Discuss in detail the compression standards for binary image, still image and video data. (16)

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