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

Question Paper Code : 33360

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Eighth Semester

Electronics and Instrumentation Engineering

EC 1034/070300044 — DIGITAL IMAGE PROCESSING

(Regulation 2004/2007)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is a digital image?

2. What is the need for perspective transformation?

3. Define Histogram.

4. What are frequency domain filters?

5. What is image segmentation?

6. Define Threshold.

7. What are decision theoretic methods?

8. What is meant by Expert system?

9. In Information theory, If P(X) is 0.3, calculate the Amount of Information I(X).

10. Define Entropy.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Discuss in detail about Image sampling and quantization. (8)

(ii) Explain the basic relationships between pixels and how to calculate distance measures. (8)

Or

(b) What are two–dimensional discrete cosines transforms (DCT)? Give its transform pair. Also state its properties of DCT.

12. (a) (i) Discuss about spatial domain methods in detail. (10)

(ii) Write notes on Inverse filter. (6)

Or

(b) (i) What are Wiener filters? How is it used for image restoration? Explain in detail. (10)

(ii) Differentiate linear spatial filter and non–linear spatial filter. (6)

13. (a) (i) Explain Edge Detection in details. (8)

(ii) Explain the various methods of threshold in detail. (8)

Or

(b) Discuss about region based image segmentation techniques. Compare Threshold region based techniques.

14. (a) (i) Define and explain the various Recognition approaches. (8)

(ii) Explain in detail about Image interpretation. (8)

Or

(b) With example, explain the knowledge based system model.

15. (a) (i) Explain about Error free Compression. (8)

(ii) Write a short notes on image Compression model. (8)

Or

(b) (i) Discuss about the Variable Length Coding compression schemes. (10)

(ii) Explain about the video coding. (6)

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