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Question Paper Code : 51373

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

Seventh Semester

Electronics and Communication Engineering

EC 2029/EC 708 — DIGITAL IMAGE PROCESSING

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Hue and Saturation.
2. What do you mean by mach band effect?
3. Define Spatial Averaging.
4. Define the operation of a Harmonic Mean Filter.
5. Compare constrained and unconstrained Restoration.
6. What is the principle of Inverse filtering?
7. State the conditions for Region Splitting and Merging Processes.
8. What are factors affecting the accuracy of Region Growing?
9. What is the need for image compression?
10. What is Run Length Encoding?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Briefly discuss about the elements of a Digital Image Processing System. (8)
- (ii) Explain about the Sampling. (4)
- (iii) Write the kernel matrix for SVD transform. (4)

Or

- (b) Explain in detail about the Vidicon and Digital camera working principles. (16)

12. (a) Briefly discuss about the Histogram Equalization and specification Techniques. (16)

Or

- (b) Explain in detail about the Homomorphic Filtering and Harmonic mean filtering. (16)
13. (a) Explain the image restoration technique to remove the blur caused by uniform linear motion. (16)

Or

- (b) Discuss about the Inverse Filtering and Wiener Filtering. (16)
14. (a) (i) Write short notes on Region Merging. (4)
- (ii) Discuss about the Edge detection and Edge linking methods. (12)

Or

- (b) Explain in detail about the segmentation methods by Morphological Water shed. (16)
15. (a) (i) What is the need for Data Compression? (6)
- (ii) Explain in detail about the arithmetic Coding. (10)

Or

- (b) Write short notes on the following image Codings :
- (i) JPEG standard. (4)
- (ii) MPEG. (4)
- (iii) Transform coding. (8)