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Question Paper Code: 39410

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Elective

Electronics and Communication Engineering

01UEC910 - DIGITAL IMAGE PROCESSING

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Define Mach band Effect.
2. The observer is looking at tree 15m height at a distance of 100m. Find the size of the retinal image.
3. Define Homomorphic filtering.
4. Define smoothing.
5. Record the Linear and Non linear Filters.
6. List the short comings of histogram equalization.
7. Why edge detection is most common approach for discontinuities?
8. State the condition to be met by the partitions in region based segmentation.
9. State Hit or Miss transform.
10. What is chain codes?

PART - B (5 x 16 = 80 Marks)

11. (a) Describe the function of elements of digital image processing system. (16)

Or

- (b) (i) Discuss about the image sampling and quantization. (8)
- (ii) Describe the elements of visual perception. (8)
12. (a) Explain the smoothing and sharpening–Spatial filters. (16)
- Or
- (b) (i) Derive the 4x4 Haar matrix. List the properties of Haar transform. (8)
- (ii) Explain about Ridgelet transform. (8)
13. (a) With a mathematical model, describe constrained and unconstrained restoration. (16)
- Or
- (b) Explain mean and order statistics. (16)
14. (a) How do you link pixels through global processing ? How do you perform edge detection? Give suitable algorithm and discuss how the edge points are linked. (16)
- Or
- (b) Explain the Principles of Region growing. (16)
15. (a) Explain about the video compression standard. (16)
- Or
- (b) (i) Demonstrate image compression using Huffman coding. (8)
- (ii) Describe Bit plane coding. (8)
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