8E8162

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B.Tech. VIII Semester (Main/Back) Examination, April/May-2017
Computer Science & Engineering
8CS2A Digital Image Processing
CS & IT

rtuonline.com

Time : 3 Hours

Maximum Marks : 80
Min. Passing Marks : 26

Instructions to Candidates:

*Attempt any **five questions**, selecting **one question** from **each unit**. All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitable be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

Unit-I

1. a) Define the image. Explain the steps of digital image processing with suitable diagram. (8)

   b) Explain the applications of digital image processing. (8)

(OR)

1. a) Explain image sensing and acquisition. (8)

   b) Explain color vision model with example. (8)

Unit-II

2. a) What do you understand by Histograms processing. Explain its specifications. (8)

   b) What is spatial filtering? Define spatial correlation and convolution with an examples. (8)

(OR)

2. a) Explain the properties of Fourier transform in detail. (8)

   b) Write a short notes on : (8)

   i) Colour transforms

   ii) Wavelet transforms

3. a) Explain image degradation and restoration process. **(10)**

   b) Explain noise and inverse filtering. **(6)**

(OR)

3. Design Homo morphic filtering. How do we get back the modified image? **(16)**

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4. a) Describe Lossy compression techniques. **(10)**

   b) Explain Huffman coding with example. **(6)**

(OR)

4. Write a short notes on (any two) : **(16)**

   a) Interpixel redundancy

   b) Psychovisual redundancy

   c) JPEG compression

   d) Coding redundancy

Unit-V

5. a) Explain edge detection in detail. **(8)**

   b) Explain region based segmentation with suitable example. **(8)**

(OR)

5. a) Explain hough transforms. **(8)**

   b) Explain about thresholding. **(8)**

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