8E5006

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B.Tech. (Sem.VIII) (Main/Back) Examination - 2013
Computer Science
8CS4.3 Digital Image Processing
(Common for 8IT4.3)

Time : 3 Hours [Total Marks : 80

[Min. Passing Marks : 24

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 suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

UNIT - I

1. (a) Explain Image Stochastic characterization & what are the Psychophysical Vision Properties. **8**
   (b) What is eye physiology. Explain Visual Phenomena with example. **8**

OR

1. (a) Explain Monochrome Vision Model with Example. **8**
   (b) Explain Color Vision model with Example. **8**

UNIT - II

2. (a) What is Image Reconstruction systems, explain with example. **8**
   (b) What is Vector-Space Image Representation explain with example. **8**

OR

2. (a) What are Image Probability Density Models. Explain in brief. **8**
   (b) What is monochrome image quantization. Explain with example. **8**

UNIT - III

3. (a) What do you mena by sampled image superposition and convolution. Explain it. **8**
   (b) What is superposition and convolution operator relationships? Explain it. **8**

OR

3. (a) Explain cosine, Sine and Hartley Transforms. **8**
   (b) Explain transform domain superposition. **8**

UNIT - IV

4. (a) Explain edge cirspening and image restoration models explain in brief. **8**
   (b) What are the optical system models. Explain with example. **8**

OR

4. (a) Explain point and spatial image restoration techniques with example. **8**
   (b) What is camera imaging model. Explain with example. **8**

UNIT - V

5. (a) What is Morphological Image Processing. Explain with example. **8**
   (b) What are Region Segmentation Methods. Explain with example. **8**

OR

5. (a) What are 6 gray scale image morphological operations. Explain it. **8**
   (b) Explain first order derivative edge detection and second order derivative edge detection. **8**