8E4092

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B.Tech. VIII Semester (Main/Back) Examination - 2013
Electronics & Comm.
8EC4.1 Image Processing Pattern Recognition
Common for 8EC4.1, 8EI4.3, 8EX4.1, 8AI4.1 & 8BM4.3

Time : 3 Hours **Maximum 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) Give fundamental steps in Digital Image Processing. Explain each block. **(10)**
   b) Explain Image sensing and acquisition using sensor array. **(6)**

OR

1. a) Describe how an Image is formed in the EYE? **(10)**
   b) Explain all components of an Image Processing system. **(6)**

Unit - II

2. a) What do you mean by sampling and Quantization in Digital Image Processing. How digital Images are Represented? **(6+4)**
   b) What do you mean by Spatial & Gray Level Resolution. **(6)**

OR

2. a) How Zooming & Shrinking is done in Digital Image Processing. **(6)**
   b) What do you mean by Aliasing in Digital Image Processing? Explain Moire pattern. **(6+4)**

Unit - III

3. a) Explain the Image Degradation Model and Restoration Process. **(8)**
   b) Explain various types of Noise & their PDF usually occurs in Image. **(8)**

OR

3. Describe Adaptive Local Noise reduction filter and Adaptive Median filter. **(8+8)**

Unit - IV

4. a) What is Redundancy? Describe various types of Redundancy in digital Image. **(8)**

   b) How these Redundancy is Removed? Explain with the help of Image Compression Model. **(8)**

OR

4. Describe various colour space formates and various scaling methodologies. **(16)**

Unit - V

5. Explain importance of knowledge representation in expert system. Give classification of knowledge. **(16)**

OR

5. a) What is temporal and commonsense reasoning? **(8)**

   b) Describe the Rules of Inference. **(8)**