

M 22908

Reg. No. :

Name :

VIII Semester B.Tech. Degree (Reg./Sup.– Including Part Time)
Examination, April 2013
(2007 Admn. Onwards)
PT 2K6/2K6 EC 805(B) : DIGITAL IMAGE PROCESSING

Time : 3 Hours

Max. Marks : 100

Instruction : Answer all questions.

(8×5=40)

- I. a) Write notes on how a digital image is represented and the advantages of digital image processing.
 - b) Write notes on KL transform. Also state the drawbacks and applications of KL transform.
 - c) Write notes on image restoration process. Give neat sketches for the same.
 - d) Write notes on colour image enhancement.
 - e) Explain segmentation by region growing algorithm.
 - f) Write notes on perceptron and also explain the perceptron training algorithm.
 - g) Draw and demonstrate the working of a general image compression system.
 - h) Write notes on arithmetic coding.
- II. a) Explain in detail with the help of a suitable example the process of creating a digital image from a continuously sensed analog data. 15

OR

- b) Explain in detail the algorithm to generate Haar Basis. Generate one Haar Basis for $N=2$. 15

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- III. a) Explain inverse filtering in detail with an example. 8
 - b) Explain how the blur caused by linear motion is removed. 7
 - OR
 - c) Explain in detail the constrained least squares filtering technique for image restoration with suitable example. 15
 - IV. a) Explain in detail on how a neural network is trained using back propagation. Give suitable examples and diagrams to demonstrate the same. 15
 - OR
 - b) Explain in detail the pattern classes and representation of pattern classes. Also explain the different approaches to object recognition. 15
 - V. a) Explain in detail the wavelet based coding in detail with suitable examples. 15
 - OR
 - b) Explain in detail the vector quantization and the different types of vector quantization with suitable figures and examples. 15
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