Printed Pages : 2

TEC – 044

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0394 Roll No.

B. Tech.

(SEM. VIII) EXAMINATION, 2008-09

DIGITAL IMAGE PROCESSING

Time : 3 Hours] *[Total Marks : 100*

Note : Attempt all questions.

1 Attempt any **two** of the following: 10×2=20

(a) Define digital image processing system. What are the fundamental steps in digital image processing? 10

(b) Explain sampling and quantization of images in detail with the help of suitable example. 10

(c) What do you mean by image enhancement? What are the different methods of image enhancement? 10

2 Attempt any **two** of the following: 10×2=20

(a) Define Hadamard transform. Explain the properties of Hadamard Transform. 10

(b) Explain Histogram specification and Histogram equalization with suitable example. 10

(c) Write notes on: 10

(i) One Dimensional DFT

(ii) Cosine Transform.

3 Attempt any **two** of the following:

(a) Draw and explain image Degradation/Restoration Model. Differentiate between image restoration and image enhancement. **10**

(b) Explain how a Wiener filter is used for restoring images in the presence of noise. **10**

(c) Explain following filters and how are they used in image restoration : **10**

(i) Notch filters

(ii) Adaptive filters.

4 Attempt any **two** of the following:

(a) Describe the principle of lossless and lossy predictive coding methods. **10**

(b) With mathematical support define two dimensional transform coding of images. **10**

(c) Write notes on : **10**

(i) Run length coding

(ii) Pixal coding.

5 Attempt any **two** of the following :

(a) Write down different image analysis techniques. Explain image segmentation technique in detail. **10**

(b) Define Edge detection and edge detection operators. **10**

(c) Explain spatial feature extraction. **10**
