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**
