Printed Pages : 3 TCS702

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

PAPER ID : 0101 Roll No.

B.Tech

(SEM VII) ODD SEMESTER THEORY EXAMINATION 2009-10

DIGITAL IMAGE PROCESSING

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

Note : (1) Attempt all questions.

(2) Each question carries equal marks.

1 Attempt any four parts of the following : 5×4=20

(a) Explain the sampling and quantisation of images with the help of suitable diagram.

(b) Discuss the Visual System and elements of Visual Perception.

(c) Discuss the Histogram specification.

(d) Explain the contrast stretching with the help of example.

(e) Explain the Digital processing of camera images.

(f) Explain spatial domain methods.

2 Attempt any four parts of the following :

(a) Explain the concept of filtering and its advantage.

(b) Discuss low-pass filter and high-pass filter in brief.

(c) Explain the Minimum Mean-square Error Restoration.

(d) Explain the operation of Band-pass filters.

(e) Explain the basis of filtering in Frequency Domain and Frequency Domain method.

(f) Discuss the common sources of blurring and noise.

3 Attempt any two parts of the following :

(a) Explain the HSI (Hue Saturation Intensity) colour model. Discuss Image Smoothing too.

(b) Explain the feature extraction and differentiate it with the segmentation of the image processing.

(c) Explain the Morphological image processing in detail.

4 Attempt any two parts of the following :

(a) Explain the Geometric Transformation of Images using Spline-Interpolation.

(b) Discuss various Thresholding algorithms.

(c) Write short notes on the following :

(i) Edge relaxation

(ii) Border Tracing

5 Attempt any four parts of the following :

(a) Explain the flow diagram of Image analysis and understanding methods.

(b) What is clustering? Discuss types of clustering.

(c) Explain the feature extraction and feature detectors.

(d) Discuss Geometric Invariants.

(e) Describe in brief object recognition.

(f) Discuss Multi-level feature processing.