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Printed Pages : 2

TIT-11

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

**PAPER ID : 0152**

Roll No. 

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**B. Tech.**

**(SEM. VII) EXAMINATION, 2008-09  
DIGITAL IMAGE PROCESSING**

Time : 3 Hours]

[Total Marks : 100

- Note :
- (1) Attempt all questions.
  - (2) All questions carry equal marks.

1 Attempt any **four** parts of the following :

- (a) Differentiate between Image and scene. How is an image displayed on a display unit ? Explain.
- (b) Explain the sampling and Quantisation of images in details with the help of suitable example.
- (c) Discuss the Histogram specification.
- (d) Discuss the Image enhancement in spatial domain and also discuss the spatial domain methods.
- (e) Explain the contrast stretching with the help of example.
- (f) Explain visual perception and also discuss the visual system and elements of visual perception.

2 Attempt any **four** parts of the following :

- (a) Describe the filtering process with its advantages and disadvantages.
- (b) What is the purpose of using short-time Fourier transform and differentiate it with the fractional fourier transforms.
- (c) Discuss the operation of Bandpass filter.



- (d) Describe the point-spread function (PSF) model of blurring.
- (e) Explain the purpose of different order statistics filters.
- (f) Show that Fourier transform and its inverse are linear process.

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

- (a) Explain the rescaling and resampling. Differentiate between thinning and thickening.
- (b) Explain pseudocolor image processing with examples.
- (c) Describe the convex hull method. Explain the segmentation of image processing.

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

- (a) Discuss the geometric transformation of images using spline interpolation.
- (b) Explain the Hough transforms. Differentiate between region merging and region splitting.
- (c) Discuss stereo imaging. Explain the various thresholding algorithms.

5 Attempt any **four** parts of the following :

- (a) Describe recursive boundary splitting.
- (b) What is clustering ?
- (c) Discuss patterns and pattern clauses.
- (d) Explain the tree grammars and tree automata.
- (e) Discuss the training algorithms.
- (f) Explain the flow-diagram of image analysis and understanding methods.

