Printed Pages : 3

EEC068

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

PAPER ID : 121853

Roll No.

B. Tech.

(SEM. VIII) THEORY EXAMINATION, 2014-15

IMAGE PROCESSING

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

Note : Attempt all the problems.

1 Justify the validity of following statements with reasons :

(a) In image processing dirac delta impulse helps to express image digitization in an elegant way.

(b) Image is a stochastic process.

(c) M pyramid and T pyramid provides data structures to describe multiple image resolution.

(d) Grey level quantization governs the appearance of shading and false counter.

(e) Kalman is used for path detection.

(f) "Log Sigmoid" function is most eminently used function in Neural Networks.

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

(a) Discuss Fourier wavelet principal components, analysis in image analysis in detail.

(b) Differentiate in between

(i) Linear and Bicubic interpolation

(ii) Winer and Inverse filtration

(c) Discuss in detail how curve detection is done using Hough transform.

3 Answer any two parts of the following : **10×2=20**

(a) Discuss matched based segmentation in detail. What is supervised and unsupervised evaluation ? Differentiate with some examples.

(b) Discuss various types of boundaries with its boundaries in detail.

(c) Discuss neural network model in detail. What is Boltzman, Hopfield and Koherien model ? How they are useful for the recognition ?

4 Answer any two parts of the following : **10×2=20**

(a) Discuss use of Fuzzy logic in image recognition with examples.

(b) How pattern recognition method is done for rapid object recognition. Explain in detail.

(c) Discuss ADA BOOST feature selection and Learning Algorithm in detail.

5 Write short notes on : (any four) **5×4=20**

(a) Vignelting

(b) Kalman theorem

(c) Marr's theorem

(d) Viterbi algorithm

(e) Isomorphism

(f) Estimation and Detection

(g) 3D-Image processing.