Printed pages: 01 **Sub Code: NEN 043**

Paper Id: 121803 **Roll No:** | | | | | | | | | | |

B TECH

(SEM-VIII) THEORY EXAMINATION 2017-18
IMAGE PROCESSING

Time : 3 Hours **Max. Marks: 100**

Note: *Be precise in your answer. In case of numerical problem assume data wherever not provided.*

SECTION - A

1. Attempt all of the following uestions: **10 x 2 = 20**

(a) Define pixel or picture element.
(b) Which are the components involved in image processing?
(c) What do you mean by pseudo color image?
(d) What do you mean by image enhancement?
(e) Write a situation where PNG file format is more preferable than JPEG.
(f) What do you meant by Gray level?
(g) What do you mean by 8-neighbors of pixel? How it can be represented?
(h) What is Dpi? What is the effect on image quality if dpi is increase or decrease?
(i) How much memory required for storing 500x500 binary images?
(j) What is spatial resolution?

SECTION - B

2. Attempt any five of the following questions: **5 x 10 = 50**

(a) Compare Fourier and Wavelet transform. Mention applications of wavelet. Explain image pyramid in detail.
(b) What are the fidelity criteria to assess the loss during the image compression?
(c) Explain DCT and DST transform applications in Digital image processing.
(d) Explain Periodic Noise Reduction by Frequency Domain Filtering.
(e) Compare effects of Min-Max filter and Adaptive filter on image restoration.
(f) Why Laplacian mask coefficient sum is zero? Discuss the effects on resultant image by applying the Laplacian filter in frequency domain.
(g) Draw the block diagram of signature verification and explain its working.
(h) Write short note on:
  (a) Map understanding.
  (b) Bio-logical cell classification.

SECTION - C

Attempt any two of the following questions: **2 x 15 = 30**

3. What do you mean by various Arithmetic and Logical operations on image?
4. Explain relationship between image size, intensity resolution and image quality with example.
5. Explain Hough transform, topological and texture analysis.