Code: EE6T6FE-J, CS6T5FE-G, ME6T6FE-I

III B.Tech-II Semester–Regular/Supplementary Examinations March 2020
DIGITAL IMAGE PROCESSING
(Common for EEE, CSE & ME)

Duration: 3 hours   Max. Marks: 70

PART – A

Answer *all* the questions.   All questions carry equal marks

$$11x\ 2 = 22\ M$$

1.

a) What is digital image processing?

b) What are different distance measures?

c) What is meant by histogram specification?

d) Give the mask for low pass filter in spatial domain.

e) What is the function of median filter?

f) Differentiate objective fidelity criteria and subjective fidelity criteria.

g) Draw the source encoder block diagram in the image compression model.

h) What is meant by thresholding?

i) What is meant by region growing?

j) What is CMY color model.

k) Define Chromaticity.

PART – B

Answer any *THREE* questions. All questions carry equal marks.

$$3 \times 16 = 48 \text{ M}$$

2. a) Discuss the fields that use digital image processing with examples. **8 M**

   b) What is meant by connectivity among pixels? Analyze how 4-connectivity, 8-connectivity and m-connectivity is achieved along with examples. **8 M**

3. a) Explain how image enhancement is achieved using Histogram equalization with the help of an example. **8 M**

   b) Summarize and Explain smoothing linear filters for image enhancement in frequency domain. **8 M**

4. a) Compare and contrast lossless and lossy predictive coding. **8 M**

   b) Analyze arithmetic coding with an example. **8 M**

5. a) Explain the detection of discontinuities (point and line) and how they help in image segmentation. **8 M**

   b) Discribe the algorithm for edge linking via Graph-Theoretic approach. **8 M**

6. a) Illustrate in detail about Pseudo color image processing. **8 M**

   b) Compare and contrast RGB and HSI color models. **8 M**