Adikavi Nannaya University, Rajahmundry
MCA IV Semester
MCA-19405 Elective-I: 3. Image Processing
Model Question Paper

Time: 3 Hours **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1. **a)** Explain the elements of Digital Image Processing System with a neat diagram **(15M)**

Or

b)Explain terms: Neighbours of a Pixel , Adjacency, Connectivity, Regions, and Boundaries , Distance measures , Image Operations on a Pixel Basis **(15M)**

2. **a)** Define and explain low pass filters and high pass filters in brief **(7M)**
b) Define and edge. Explain various edge enhancement filters **(8M)**

Or

c) Discuss histogram techniques for Image enhancement: Histogram specification (Matching., Histogram Equalization , Local enhancement. **(15M)**

3. **a)** Explain Lossy compression and Lossy predictive coding **(15M)**

Or

b) Explain the Morphological Algorithms: Boundary Extraction, Region Filling **(15M)**

4. **a)** Distinguish Global Processing via the Hough Transform and via the Graph-Theoretic Techniques. **(15M)**

Or

b) What is Thresholding? Explain about Global Thresholding **(15M)**

Section-B (5 X 3 =15 Marks)

5. **Write a Short Note on any FIVE of the following**

a) How do you acquire an image? Explain in detail
b) What is Image Sampling and Quantization?
c) Compare one dimension and two dimension DFT
d) Distinguish between spatial domain techniques and frequency domain techniques of Image enhancement
e) Explain about the Dilation and Erosion
f) Draw the relevant diagram for source encoder and source decoder
g) Explain the Detection of Discontinuities: Point Detection, Line Detection, Edge Detection
h) Explain about Region-Based Segmentation