

Code No: **RT41043****R13****Set No. 1****IV B.Tech I Semester Supplementary Examinations, February/March - 2018****DIGITAL IMAGE PROCESSING****(Common to Electronics and Computer Engineering, Electronics and Communication Engineering and Electronics and Instrumentation Engineering)****Time: 3 hours****Max. Marks: 70***Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B*

PART-A (22 Marks)

1. a) Define the following terms:
(i) Image (ii) Resolution (iii) Pixel and (iv) Digital Image [4]
b) Compare Image Enhancement and Image Restoration. [4]
c) Give the relation for degradation model for Continuous function. [3]
d) Differentiate Pseudo color image processing and full color image processing. [4]
e) What is the need for Compression? [4]
f) What are the applications of Image segmentation? [3]

PART-B (3x16 = 48 Marks)

2. a) Compute Haar Transform for following N Value. N=8. [8]
b) Explain how Fourier transforms are useful in digital image processing and explain the properties of Fourier transform. [8]
3. a) Define Histogram of Image. Explain the concept of Histogram Equalization technique for Image enhancement. [8]
b) Explain Spatial filtering in Image enhancement. [8]
4. a) Explain the need for Image restoration. [8]
b) Explain the concept of Inverse Filtering and also mention the limitations of it. [8]
5. a) Explain about color segmentation process. [8]
b) Discuss the procedure for conversion from RGB color model to HSI color model. [8]
6. a) Draw and explain the general image compression system model. [8]
b) Write short notes on Image Pyramids and Sub band coding. [8]
7. a) Explain the significance of thresholding in image segmentation. [8]
b) Write short notes on some basic morphology algorithms. [8]