

Code No: **RT41043**

R13

Set No. 1

IV B.Tech I Semester Supplementary Examinations, March - 2017

DIGITAL IMAGE PROCESSING

(Common to Electronics & Communication Engineering, Electronics & Instrumentation Engineering and Electronics & Computer 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) Describe Weber ratio. [4]
 - b) Illustrate first and second derivatives of a 1-D digital function representing a section of horizontal intensity profile from an image. [4]
 - c) Explain about Arithmetic mean filter. [4]
 - d) Discuss about Tonal correction. [4]
 - e) Write a short note on Compression Ratio. [4]
 - f) What is global, Local and dynamic or adaptive threshold? [2]

PART-B (3x16 = 48 Marks)

2. a) Explain Fast Fourier Transform (FFT) in detail. [8]
b) Describe image formation in the eye with brightness adaptation and discrimination. [8]
3. a) What effect would setting to zero the half of lower-order bit planes have on the histogram of an image in general. [8]
b) Discuss the limiting effect of repeatedly applying a 3x3 low-pass spatial filter to a digital image. You may ignore border effects. Is this effect different from applying 5x5 filter? [8]
4. a) What are the two approaches for blind image restoration? Explain in detail. [8]
b) Explain about interactive image restoration. [8]
5. a) Briefly discuss about Complements on the color circle. [8]
b) What is color image smoothing? Explain how smoothing will done by neighborhood averaging. [8]
6. a) Explain about the Fast Wavelet Transform. [12]
b) Write a short note on Wavelet Packets. [4]
7. a) How can you control Over segmentation problem? Explain it. [8]
b) Write short notes on Haar Transforms. [8]