

**B.Tech. SEM -VII Electronics / (E & TC Engg.) 2014 Course (CBCS) :
SUMMER - 2019**

SUBJECT-ELECTIVE-I DIGITAL IMAGE PROCESSING

Day: Wednesday
Date: 15/05/2019

S-2019-2824

Time: 02.30 PM TO 05.30 PM
Max. Marks: 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Assume suitable data if necessary.

Q.1 List the components of Digital Image Processing and describe few of its applications. (10)

OR

Q.1 a) How image is sampled and quantized? (05)
b) Give basic relationships between pixels. (05)

Q.2 Describe the following terms. (10)
i) Histogram matching ii) Local histogram processing

OR

Q.2 a) How image sharpening is obtained using spatial domain filters? (05)
b) How can Gaussian filter be used for image enhancement? (05)

Q.3 What are various image compression methods? Explain Huffman coding. (10)

OR

Q.3 a) Describe the principal types of data redundancies. (05)
b) Derive the equations for discrete wavelet transform. (05)

Q.4 Why digital water making is necessary? Describe typical image water marking system. (10)

OR

Q.4 a) Enlist gray scale morphological algorithms. Illustrate any one algorithm. (05)
b) Write the significance of convex hull & thinning. (05)

Q.5 Discuss the segmentation using morphological watersheds. (10)

OR

Q.5 a) Describe any one advanced technique for edge detection. (05)
b) Write a note on Hough transform. (05)

Q.6 Describe the block diagram of Iris recognition system. (10)

OR

Q.6 a) Compare 2D and 3D images. (05)
b) Explain the concept of image recognition. (05)

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