

**B.Tech. SEM -VII Electronics / (E & TC Engg.) 2014 Course (CBCS)
: WINTER - 2018
SUBJECT-ELECTIVE-I DIGITAL IMAGE PROCESSING**

Day: Monday
Date: 03/12/2018

W-2018-2559

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 a) Describe the structures of human eye. (05)
b) Discuss the basic concept of image sampling & quantization. (05)

OR

- Q.1 Elaborate the basic relationships between pixels. (10)

- Q.2 Describe Histogram processing of digital image. (10)

OR

- Q.2 a) How smoothing filters are used for blurring and noise reduction? (05)
b) Write in brief about basic intensity transformation functions. (05)

- Q.3 Discuss sub-band coding with ties to multi resolution analysis. (10)

OR

- Q.3 a) Describe the block diagram of image compression model. (05)
b) Compare the concept of image pyramid with image resizing. (05)

- Q.4 Discuss following morphological operations (10)
i) Dilation ii) Erosion iii) Duality

OR

- Q.4 a) Describe the concept of morphological reconstruction of image. (05)
b) How connected components from binary image are extracted using morphological algorithm? (05)

- Q.5 Discuss global processing using Hough transform. (10)

OR

- Q.5 a) Write a note on thresholding used in image segmentation. (05)
b) Discuss the procedure for region growing. (05)

- Q.6 Elaborate image recognition based on Decision Theoretic methods. (10)

OR

- Q.6 a) Describe the working principle of video motion analysis. (05)
b) Write in brief about iris recognition. (05)