

Seat No.	
----------	--

SF - 549

Total No. of Pages :2

B.E. (E & Tc) (Semester - VIII) (Old) (Pre - Revised)
Examination, November - 2017
IMAGE PROCESSING
Sub. Code: 49518

Day and Date :Friday, 03 - 11 - 2017
Time :10.00 a.m. to 1.00 p.m.

Total Marks : 100

- Instructions :
- 1) All questions are compulsory.
 - 2) Figures to the right indicate full marks.
 - 3) Assume suitable data if necessary.

Q1) Attempt any three.

[18]

- a) Explain fundamental steps of digital image processing.
- b) Explain process of image formation in human eye.
- c) Explain image acquisition using single sensor and using sensor strip.
- d) Write note on brightness adaptation and discrimination.

Q2) Attempt any two.

[16]

- a) Explain any two piecewise linear transformation function used for image enhancement.
- b) Explain following gray level transformations:
 - i) Image Negative.
 - ii) Log Transformation.
- c) What is need of histogram equalization and derive equation for histogram equalization.

P.T.O.

Q3) Attempt any two.

[16]

- a) Explain concept of spatial filtering.
- b) Explain various variants of second order derivative masks for image enhancement.
- c) Explain steps used for image filtering in frequency domain.

Q4) Attempt any two.

[16]

- a) Explain erosion and dilation with the help of suitable example.
- b) Explain thinning operation with the help of mini - image.
- c) With proper example, explain opening and closing operation.

Q5) Attempt any two.

[16]

- a) What is need of image compression? Compare lossy and lossless compression.
- b) State and explain different types of edges occur in an image. Explain how Laplacian mask can be used for to detect the edeges.
- c) Give the equation for Hit - or - Miss transformation and explain how it can detect shape.

Q6) Write note on any two.

[18]

- a) DCT for image compression.
- b) Lossy predictive coding.
- c) Sobel and Prewitt mask for edge detection.

