

Extc - VII
I.V.P

11/5/18

Q. P. Code: 37810

Time : 3hrs

Max. Marks: 80

N.B:

1. Question No.1 is compulsory
2. Attempt any three out of remaining five questions
3. Assume any suitable data wherever required but justify the same
4. Illustrate answers with neat sketches wherever required

- Q.1 a) Define with diagram, perspective projection (5)
- b) What are the advantages and disadvantages of edge based segmentation? (5)
- c) What is the basic idea of Histogram modeling? (5)
- d) Write video frame classification & various digital video formats. (5)
- Q.2 a) State properties of Fourier Transform and prove convolution property of Fourier transform. (10)
- b) Given orthogonal kernel matrix A and image U: (10)

$$A = \frac{1}{\sqrt{2}} \begin{bmatrix} 1 & 1 \\ 1 & -1 \end{bmatrix}$$

$$U = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$$

Find transformed image and basis image

- Q.3 a) Compare histogram equalization, histogram specification and contrast stretching with example. (10)

- b) For 3 bit, 4x4 image, perform image negative, Bit plane slicing, And low pass filtering. (10)

0	7	3	1
3	6	4	6
2	4	2	2
1	2	5	3

- Q.4 a) Explain split and merge segmentation technique (10)
- b) Elaborate Hit or Miss transform with example (10)

- Q. 5** a) Differentiate between image enhancement and restoration
Explain application of Wiener filter (10)
- b) Which are different motion estimation techniques?
Explain any one technique in detail. (10)
- Q. 6** Write short notes on any four. (20)
- a) Opening and Closing
 - b) Homomorphic Filtering
 - c) Inverse filter
 - d) Image noise models
 - e) Hierarchical block matching algorithm