

Con. 6533-11.

(REVISED COURSE)

MP-5812

(3 Hours)

[ Total Marks : 100

- N.B. : (1) Question No. 1 is compulsory.  
 (2) Attempt any four questions from remaining six questions.  
 (3) Figures to the right indicate full marks.

- Q1.           A. Compare between contrast stretching and histogram equalization.           05  
               B. What is advantage of processing an image in the frequency domain?           05  
               C. Explain image types in detail.           05  
               D. Explain Bit Plane Slicing technique in detail and give one example of the same.           05

- Q2.A) What is Harr Transform? Find the Harr transform of the given pseudo image.           10

2	1	2	1
1	2	3	2
2	3	4	3
1	2	3	2

- B) Describe in detail how Hough transform is used for boundary shape detection.           10
- Q3.A) Describe briefly the features of a compression model with a neat block diagram.           10  
 B) Give a brief account of enhancement filters in the spatial domain.           10
- Q4. A) Explain in detail Region base Segmentation.           10  
 B) Explain Edge linking in detail.           10

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- Q5.A) Explain the homomorphic filter in detail. 10
- B) Explain the various properties of the fourier transform. Explain the relevance of each in image processing. 10
- Q.6.A) For the image given find out moments  $m(0,0), m(1,0), m(0,1), m(1,1), m(2,0), m(0,2)$ . 10

3	1	2	2
2	3	2	1
3	2	0	1
1	0	3	2

- B) Given a 7x7 image, use the hit or miss transform find the top edge of the 5x5 square. 10

A=

0	0	0	0	0	0	0
0	1	1	1	1	1	0
0	1	1	1	1	1	0
0	1	1	1	1	1	0
0	1	1	1	1	1	0
0	1	1	1	1	1	0
0	0	0	0	0	0	0

Use the two structuring elements shown below :

B1=

0	0	0
0	(1)	0
0	1	0

B2=

0	1	0
0	(0)	0
0	0	0

- Q7. Write short notes on :

20

- Sampling and Quantization.
  - Laplacian Operator for Edge Detection
  - Connectivity of Pixels
  - Log Transformation.
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