

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII • EXAMINATION – WINTER 2013****Subject Code: 170307****Date: 03-12-2013****Subject Name: Image Processing****Time: 10.30 am - 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain the structure of Human eye and formation of image in eye. **07**
(b) List the various image formats. Discuss the various types of image sampling. **07**
- Q.2** (a) List various point processing techniques and explain any two in detail. **07**
(b) What is histogram equalization? Demonstrate with example. **07**
- OR**
- (b) Explain mean and median filtering with example. **07**
- Q.3** (a) What is edge? Explain the types of discontinuities in image. **07**
(b) Explain the circle detection method using Hough transform. **07**
- OR**
- Q.3** (a) List the various methods of region based segmentation and explain any one in detail. **07**
(b) Explain Haar transform and its application in image processing. **07**
- Q.4** (a) Differentiate Hadamard and Walsh transform. **07**
(b) What is Hit-or-Miss transform? Illustrate with example. **07**
- OR**
- Q.4** (a) Explain the terms; Dilation, erosion, opening and closing. **07**
(b) What are the methods of Boundary extraction? Explain chain coding. **07**
- Q.5** (a) Explain the various redundancies in the image. **07**
(b) With suitable example, explain Huffman's image compression method. **07**
- OR**
- Q.5** (a) Explain region filling and skeletonization. **07**
(b) What are moments in the image? What are its applications? **07**
