

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER- VII (OLD) • EXAMINATION – WINTER 2017

Subject Code: 170307**Date: 02-11-2017****Subject Name: Image Processing (Department Elective-I)****Time: 10:30 am to 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 fundamental steps of Digital image processing. **07**
(b) Explain image acquisition in detail with different types of image sensor. **07**
- Q.2** (a) Write short note on Homomorphic filtering. **07**
(b) Explain Intensity slicing technique using 8-bit 5×5 image. **07**
- OR**
- (b) Explain Image Negative and Log transformations in spatial domain using 8-bit 5×5 image. **07**
- Q.3** (a) Explain Order statistic filter using 8-bit 4×4 image. **07**
(b) Describe different types of Low pass filtering in frequency domain. **07**
- OR**
- Q.3** (a) Explain Histogram matching technique with example. **07**
(b) Explain High pass filtering in spatial domain using 8-bit 3×3 image. **07**
- Q.4** (a) Explain Linear Hough transform in detail. **07**
(b) Explain Opening and Closing of image using 7×7 binary image. **07**
- OR**
- Q.4** (a) Explain Arithmetic coding for Image compression. **07**
(b) Explain Hit or Miss transformation in morphological image processing. **07**
- Q.5** (a) Explain DCT and DST transform applications in Digital image processing. **07**
(b) Explain any one Edge linking algorithm. **07**
- OR**
- Q.5** (a) What is Representation and Description in image processing? Explain characteristics of good features. **07**
(b) Explain Huffman coding for image compression. **07**
