

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – I • EXAMINATION – WINTER • 2013****Subject code: 710404N****Date: 30-12-2013****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 basics of Image filtering in spatial domain. 07
(b) Explain in detail spatial resolution and gray level resolution. 07
- Q.2** (a) What is Histogram? Explain in detail process of Histogram Equalization. 07
(b) Write a brief note on Objectives of digital Image processing. 07
- OR**
- (b) Components of Digital Image Processing, A Short note. 07
- Q.3** (a) Explain in detail different models of color image. 07
(b) Enlist and explain various point processing techniques used for image enhancement. 07
- OR**
- Q.3** (a) Write a note on various Image acquisition techniques. 07
(b) Draw block diagram of image processing in frequency domain and explain each block. 07
- Q.4** (a) What do you mean by Image restoration? Is original Image can be restored? Justify your answer. 07
(b) Give Summary of Morphological operations on Binary Images. 07
- OR**
- Q.4** (a) Wiener Filtering process. 07
(b) State and explain the various application of gray scale morphology. 07
- Q.5** (a) Write a short note on Dilation and Erosion Morphological operations with suitable example. 07
(b) Write a short note on Hough transform. 07
- OR**
- Q.5** (a) Explain various steps performed in JPEG2000. 07
(b) Write a short note on HAAR transform. 07
