

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER - V EXAMINATION - WINTER 2015

Subject Code: 2650011

Date: 10/12/2015

Subject Name: Image Processing (IP)

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) Define Image Processing and explain the components of an Image Processing System. **07**
(b) Explain Coding Redundancy and Image Compression Model in detail. **07**
- Q.2** (a) Explain fundamental steps involved in Digital Image Processing. **07**
(b) Explain Smoothing Spatial Filters in detail. **07**

OR

- (b) Explain the concept of Image Enhancement using arithmetic/logic operations. **07**
- Q.3** (a) What is Morphology? Explain Erosion and Dilation in detail. **07**
(b) Explain Basic Gray Level Transformations. **07**

OR

- Q.3** (a) Explain LZW Coding in detail. **07**
(b) What is Error-Free Compression? Explain Huffman Coding in detail. **07**
- Q.4** (a) Explain Convex Hull in detail. **07**
(b) Explain Local Segmentation in detail. **07**

OR

- Q.4** (a) Explain Global Segmentation in detail. **07**
(b) Explain Correlation Matching and Optimal Statistical Classifier in detail. **07**
- Q.5** (a) Explain Noise Model and Inverse filter in detail. **07**
(b) Explain the concept of Boundary Extraction and Region Filling in detail. **07**

OR

- Q.5** (a) What is Image Segmentation? Explain Point, Line and Edge detection. **07**
(b) Explain Watershed Segmentation and Region Based Segmentation in detail. **07**
