

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.

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|-----|-----|---|----|
| 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 |
