Seat No.:	Enrolment No
(GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER II – EXAMINATION – WINTER - 2016 Date: 19/11/2016 Subject Code: 2720208 **Subject Name: Image Processing** Time: 2:30 pm to 5:00 pm **Total Marks: 70 Instructions:** Attempt all questions. 1. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 0.1 07 (a) Explain fundamental steps in digital image processing. Explain different color model with color transformation in detail. **07** Explain hough transform with example **Q.2** 07 Explain smoothing frequency domain filter in detail. 07 **(b)** OR Explain Adaptive filters in detail. **07 07** 0.3 (a) Equalize the given histogram Grey 3 4 5 6 7 0 1 No. of 100 100 150 150 150 100 150 100 pixels **(b)** Explain region filling method in morphological operation 07 **Q.3** Differentiate between image enhancement and image restoration process with **07** (a) example. Explain various noise models. 07 **(b)** Show that a high pass filter can be obtained as HP=Original – LP(assume a 3*3 mask) Explain why a median filter is called a salt and pepper filter. Q.4 Explain sobel and prewitt edge detector in detail. What is the advantage of these 07 edge detectors? Explain hit or miss morphological operation with example **07** OR **Q.4** (a) Explain Huffman coding with example. 07 Explain HSI segmentation method in detail 07 Q.5 (a) Explain Subband coding in detail. 07 Explain region filling method in morphological operation 07 OR (a) Explain arithmetic coding with example. 07 Q.5 (b) Explain block diagram of JPEG standard in detail. 07
