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GUJARAT TECHNOLOGICAL UNIVERSITY M. E. - SEMESTER – I • EXAMINATION – SUMMER • 2014

Subject code: 713103N Date: 19-06-2014 **Subject Name: Biomedical Image Processing** Time: 02:30 pm - 05:00 pm **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. Write a short note on image formation process in human eye. Q.1 (a) 07 Explain Image sampling and quantization process. (b) **07** Explain histogram processing and histogram equalization technique. Q.2(a) 07 Explain components of digital image processing system. **07 (b) (b)** Enlist and explain any one relationship between pixels in digital image. **07** Q.3Write a short note on basic gray level transformation. 07 (a) Explain Discrete Cosine Transform and its utility in image compression. **07** (b) OR Q.3 Explain Radon transform in brief. **07** (a) Explain in brief Sobel and Prewitt edge operator. (b) **07** Discuss histogram matching with suitable example. **Q.4** (a) 07 Write a short note on nonlinear contrast stretching. **(b) 07** Explain intensity level slicing and bit-plane slicing. **Q.4** (a) 07 Write a short note on linear contrast stretching. (b) 07 Explain image enhancement using arithmetic and logic operation. **07 Q.5** (a) Write a short note on various threshold selection methods for image 07 **(b)** processing. OR Write a short note on Gabor transform of image. **07** Q.5 (a) What do you mean by smoothing of image? Explain mean and median filter. **(b) 07**
