Seat No.:	Enrolment No
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GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER- I (OLD course) • EXAMINATION - SUMMER 2015

Subject Code: 713103 Subject Name: Biomedical Image Processing Time: 10:30 am to 1:00 pm Instructions: Total Mark			Date: 13/05/2015	
		s: 70		
	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a)	Explain histogram processing and histogram equalization technique with example.	07	
	(b)	Explain components of digital image processing system.	07	
Q.2	(a) (b)	Explain how image acquisition is done using sensor strips? Explain line detection technique using Hough transform. OR	07 07	
	(b)	Explain intensity level slicing and bit-plane slicing.	07	
Q.3	(a) (b)	Write a short note on Laplacian spatial filter. Explain Short Time Fourier Transform (STFT) in brief. OR	07 07	
Q.3	(a) (b)	Give brief about unconstrained restoration and discuss about Wiener filter. Explain Discrete Cosine Transform and its utility in image compression.	07 07	
Q.4	(a) (b)	Explain region growing segmentation technique. What are principle objectives of image enhancement? OR	07 07	
Q.4	(a) (b)	Explain image enhancement using arithmetic and logic operation. Describe in brief Sobel and Prewitt edge operator.	07 07	
Q.5	(a) (b)	Explain brightness adaption and discrimination of Human vision. Write a short note on various threshold selection methods for image processing.	07 07	
Q.5	(a) (b)	OR Write a short note on Gabor transform of image. What are the basic relationships between pixels? With neat diagrams and appropriate mathematical expressions explain: i) Neighbors ii) Adjacency iii) Connectivity	07 07	
