Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME Semester –I Examination Feb. - 2012

Subject code: 713103N **Date: 17/02/2012**
Subject Name: Biomedical Image Processing
Time: 10.30 am – 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)**	Explain structure of the Human eye.	**07**
	(b)	Explain brightness adaption and discrimination of Human vision .	**07**
Q.2	**(a)**	Explain Image sampling and quantization process.	**07**
	(b)	Explain fundamental steps in digital image processing.	**07**
		OR	
	(b)	Explain geometric spatial transformations of image in brief.	**07**
Q.3	**(a)**	Explain piecewise linear transformation functions in brief.	**07**
	(b)	Explain histogram statistics for image enhancement.	**07**
		OR	
Q.3	**(a)**	Explain Laplacian spatial filter.	**07**
	(b)	Explain sharpening spatial filter.	**07**
Q.4	**(a)**	Explain Discrete Cosine Transform (DCT) in brief.	**07**
	(b)	Discuss one of the application of Gabor transform in brief .	**07**
		OR	
Q.4	**(a)**	Explain Short Time Fourier Transform (STFT) in brief.	**07**
	(b)	Explain Radon transform in brief	**07**
Q.5	**(a)**	Give brief about unconstrained restoration and discuss about Wiener filter.	**07**
	(b)	Give brief about constrained least square error restoration.	**07**
		OR	
Q.5	**(a)**	Explain line detection technique using Hough transform.	**07**
	(b)	Explain region growing segmentation technique.	**07**

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