Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER–II EXAMINATION – SUMMER 2015

Subject Code: 2722610 **Date: 30/05/2015**

Subject Name: Advanced Image Processing

Time: 02:30 PM to 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.**

Q.1	**(a)**	Explain 1st order edge detection technique with required sketch.	**07**
	(b)	What are group operators for Image Processing? Give their Names and explain template convolution in detail.	**07**
Q.2	**(a)**	Explain background estimation by mean and median filtering.	**07**
	(b)	Explain Erosion and Dilation operations with examples.	**07**
		OR	
	(b)	Write down the logical code for Gaussian template for averaging.	**07**
Q.3	**(a)**	Explain Phase Congruency its advantages, disadvantages and uses.	**07**
	(b)	Compare edge detection operators.	**07**
		OR	
Q.3	**(a)**	Give steps for Canny edge detection Operation. Explain Non-maximum suppression and hysteresis thresholding with figure.	**07**
	(b)	Give steps for Canny edge detection Operation. Explain Non-maximum suppression and hysteresis thresholding with figure.	**07**
Q.4	**(a)**	Explain Scale Invariant Feature Transform.	**07**
	(b)	Brief about techniques for motion detection.	**07**
		OR	
Q.4	**(a)**	Write down logical steps for greedy algorithm.	**07**
	(b)	Describe Geometry Hough Transform.	**07**
Q.5	**(a)**	Write down short note on Digital water marking.	**07**
	(b)	Discuss about any basic compression Models.	**07**
		OR	
Q.5	**(a)**	Brief about 3D sources of data and slicing the data set.	**07**
	(b)	Discuss about Template matching for shapes.	**07**

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