Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER– II (Old course)• REMEDIAL EXAMINATION – SUMMER 2015

Subject Code: 1724106 **Date:15/05/2015**

Subject Name: Image Matching and Registration

Time: 02:30 pm to 5:00 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 the terms edge detection, segmentation and matching in image processing.	**07**
	(b)	What is the need for image registration process ? Where is it used ? Can it be said as an application of geometric transform?	**07**
Q.2	**(a)**	Define forward transform and inverse transform with suitable example.	**07**
	(b)	Write steps to apply geometric transformation to images.	**07**
		OR	
	(b)	State various types of affine transformation and explain one with suitable example.	**07**
Q.3	**(a)**	Define image feature and explain corner detection method.	**07**
	(b)	What is the signature? How can it be used in image processing ?	**07**
		OR	
Q.3	**(a)**	Define multimodal, multiview and multifocus with reference to image registration.	**06**
	(b)	Write an algorithm for recovering affine transformation using correlation based method.	**08**
Q.4	**(a)**	Explain parameters to measure of image quality.	**07**
	(b)	Write an algorithm for mutual information based image registration process.	**07**
		OR	
Q.4	**(a)**	Explain image registration as applicable to medical images.	**07**
	(b)	Why image re-sampling is required? What is transform model estimation ?	**07**
Q.5	**(a)**	Explain image registration as applicable to remote sensing.	**07**
	(b)	Explain any one method of optimization that can be used in image registration process.	**07**
		OR	
Q.5	**(a)**	Write down one image registration algorithm that can be used in license plate recognition application.	**07**
	(b)	Demonstrate how image registration process can be used in face recognition system.	**07**

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