Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER-V • EXAMINATION – SUMMER • 2015

	· ·	Name: Image Processing	15
Ti	Time: 02:30 pm to 05:00 pm Instructions: Total Marks: 70		70
		Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a) (b)	Explain fundamental steps involved in digital image processing. Explain the components of an image processing system.	07 07
Q.2	(a) (b)	Explain basic gray level transformations. Explain image enhancement using arithmetic/logic operations. OR	07 07
	(b)	Explain Smoothing Spatial Filters in detail.	07
Q.3	(a)	Write short note. 1. Noise Model 2. Inverse filter	04 03
	(b)	What is Error-free compression? Explain Huffman coding in detail. OR	07
Q.3	(a)	Write short note. 1. Coding Redundancy 2. Image compression model	04 03
	(b)	Explain LZW coding in detail.	07
Q.4	(a) (b)	What is morphology? Explain erosion and dilation in detail. Attempt following. 1. Boundary extraction	07
		2. Region filling OR	04
Q.4	(a) (b)	What is image segmentation? Explain Point, Line and Edge detection. Explain Convex Hull in detail.	07 07
Q.5	(a) (b)	Explain Watershed Segmentation and Region Based Segmentation in detail. Explain Global Segmentation in detail.	07 07
Q.5	(a) (b)	OR Explain Local Segmentation in detail. Explain Correlation Matching and Optimal Statistical Classifier in detail.	07 07
