Sea	ıt No.:	Enrolment No		
		GUJARAT TECHNOLOGICAL UNIVERSITY ME – SEMESTER I (OLD) – • EXAMINATION – SUMMER 2016		
Subject Code: 710404N Date: 20 Subject Name: Image Processing			0/05/2016	
Ti	me:02 truction 1. 2.	2:30 pm to 05:00 pm	70	
Q.1	(a)	 Explain the fundamental steps in digital image processing. What is the size of 8 bit gray scale image consisting of 20 rows and 20 columns in KBytes? 	05 02	
	(b)	 Explain in brief: Pixel Replication, Connected Components. Describe representation of digital image. 	04 03	
Q.2	(a) (b)	Explain frequency domain filtering technique for the image sharpening. Explain the following transforms. 1. WHT 2. Haar transform	07 07	
		OR		
	(b)	Explain the following transforms. 1. DWT 2. DCT	07	
Q.3	(a) (b)	Discuss in detail log transformation and power law transformation. What is histogram? Explain the concept of histogram equalization with suitable example.	07 07	
		OR		
Q.3	(a) (b)	How contrast stretching is achieved? Explain it in detail with its advantages. State characteristics of 1st and 2nd order derivative when applied to digital image.	07 07	
Q.4	(a)	What is dilation? What is the limiting effect of repeatedly dilating an image? Assume that a trivial structuring element is not used.	07	

(b) Discuss morphological opening and closing of binary image with its

What do you mean by image restoration. Explain wiener filtering process.

(a) Write a short note on hit or miss transformation with suitable example.

Write a short note on Hough transformation.

Discuss various steps performed in JPEG 2000.

Write a short note on chain codes.

(b) Explain in detail co-occurrence matrix.

OR

OR

applications.

Q.4

Q.5

Q.5

(a)

(a)

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