## GUJARAT TECHNOLOGICAL UNIVERSITY

		ME – SEMESTER I (OLD) – • EXAMINATION – SUMMER 2016	
Su	bject	Code: 714104N Date:19/05/20	16
Su	bject	Name: Digital Image Processing & Applications	
Time:02:30 pm to 05:00 pm Total Marks:			70
Inst	tructio	ons:	
	1.	Attempt all questions.	
	2. 3	Make suitable assumptions wherever necessary. Figures to the right indicate full marks	
	5.	rightes to the right indicate fun marks.	
Q.1	<b>(a)</b>	Write steps for image filtering in the frequency domain. Write expressions of ideal, butterworth and Gaussian LPF.	07
	<b>(b)</b>	Write difference between Image Restoration and Image Enhancement. Draw	07
		Image degradation and restoration model.	
Q.2	<b>(a)</b>	Explain Histogram Equalization.	07
	<b>(b)</b>	Explain the concept of homomorphic filtering.	07
		OR	
	<b>(b)</b>	Define Resolution and Explain Spatial and Gray Scale Resolution.	07
Q.3	(a)	Explain Mean Filters and Order Statistic filters for removal of noise.	07
-	<b>(b)</b>	Explain procedure for Image sampling and quantization.	07
		OR	
0.3	<b>(a)</b>	Explain 1. Hit and Miss Transform 2. Thinning in context to morphological	07
<b>Z</b>		image processing	•••
	<b>(b)</b>	Explain Histogram Stretching	07
Q.4	(a)	Explain any two point processing image enhancement techniques	07
	<b>(b)</b>	Explain 4-Point Adjacency	07
		OR	
<b>O.4</b>	(a)	Explain the concept of Mask Processing by explaining low pass average	07
-		filtering and weighted low pass average filtering.	
	<b>(b)</b>	Explain various noise models that affects the image.	07
Q.5	<b>(a)</b>	Explain (1) Erosion (2) Dilation (3) Opening (4) Closing	07
	<b>(b)</b>	Explain inverse filtering	07
		OR	
Q.5	<b>(a)</b>	Explain Weiner Filtering	07
	<b>(b)</b>	Explain Split and Merge technique for segmentation	07
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