## C.U.SHAH UNIVERSITY **Summer Examination-2017**

## Subject Name: Digital Image Processing

	Subject Code: 4TE08DIP1			Branch: B.Tech (CE)	
	Semes Instruc		Date : 18/04/2017	Time : 02:30 To 05:30	Marks :70
	(2)	Instructions	ammable calculator & any converted and a second converted and answer bool agrams and figures (if necession of the second converted and the second	•	iibited.
	(4)	Assume suita	ble data if needed.		
Q-1		Define Follow	ving Terms:		(14
	<b>(a)</b>	Gray level res	-		(
	(b)	Spatial resolu			
	(c)	Pixel			
	( <b>d</b> )	Connectivity			
	(e)	Image Segme	ntation		
	( <b>f</b> )	Region			
	<b>(g</b> )	Edge			
	( <b>h</b> )	Boundary			
	(i)	Structuring el	ement		
	(j)	Discontinuity	based Segmentation Appro	ach	
	( <b>k</b> )	Exponential r	oise		
	<b>(l)</b>	Contrast			
	( <b>m</b> )	Histogram.			
	<b>(n)</b>	Blind Spot in	Human Eye		
Atte	mpt an	y four questio	ns from Q-2 to Q-8		
Q-2		Attempt all o	uestions		(14
	<b>(a)</b>	Give some ap	plications of Digital Image	Processing.	
	<b>(b</b> )	Explain Fund	amental Steps in Digital Im	age Processing with block diagram	m.
Q-3		Attempt all o	uestions		(14
	<b>(a)</b>	Explain Com	ponents of an Image Process	sing System with block diagram.	
	<b>(b</b> )	Explain the S	tructure of Human Eye with	figure.	
Q-4		Attempt all o	uestions		(14
-	<b>(a)</b>	Explain Simp	le Image Formation Model.		
	<b>(b)</b>	Explain Bit-P	lane Slicing. How it is Perfe	ormed?	

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Q-5	(a) (b)	Attempt all questions Write a short note on The Hit or Miss transformation. Compare Dilation and Erosion	(14)
Q-6	(a) (b)	Attempt all questions Compare Image Restoration and Image Enhancement. Explain A Model of the Image Degradation/Restoration Process with necessary figure.	(14)
Q-7	(a) (b)	Attempt all questions Draw block diagram of image processing in frequency domain and explain each block. How a colour image processing is different from gray image processing?	(14)
Q-8	(a) (b)	Attempt all questions Write a brief note on Laplacian in the field of Image Segmentation. Explain Region Splitting and Merging in the field of Image Segmentation.	(14)

