Code No: **R41043**

R10

Set No. 1

IV B.Tech I Semester Supplementary Examinations, March/April - 2016 DIGITAL IMAGE PROCESSING

(Common to Electronics & Communication Engineering and Electronics & Computer Engineering)

Time: 3 hours Max. Marks: 75

Answer any FIVE Questions All Questions carry equal marks

1	a)	What are the various fundamental components of digital image processing? Explain.	[8]
	b)	Explain the following: i) neighbors of a pixel ii) Adjacency	[7]
		1) heighbors of a pixer in Adjacency	
2	a)	Explain the fundamentals of intensity transformations and spatial filtering.	[8]
	b)	What is meant by membership function? Explain.	[7]
3	a)	Explain the following properties of 2D – DFT	
,	a)	i) Translation and Rotation ii) Periodicity	[8]
	b)	Explain image smoothing using ideal low pass filter.	[7]
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1	a)	Draw the image degradation model and explain it.	[8]
	b)	Explain the principles of Computed Tomography.	[7]
5	a)	Explain about CMY and CMYK color models.	[8]
	b)	What are color complements? How they are useful in image processing.	[7]
5	a)	What are the various Multi Resolution Analysis (MRA) requirements? Explain.	[8]
	b)	Explain Huffman coding with an example.	[7]
7	a)	Explain the following morphological operations:	
	/	i) Thinning ii) Thickening	[8]
	b)	Prove that Erosion and Dilation are duals of each other with respect to set	
		complementation and reflection.	[7]
3	a)	Explain how the image gradient is useful in edge detection.	[8]
	b)	Explain the edge linking using local processing.	[7]
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