Code No: **R41043** **R10** **Set No. 1**

IV B.Tech I Semester Supplementary Examinations, February/March - 2018

DIGITAL IMAGE PROCESSING

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

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
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1	a)	List out the various applications of digital image processing.	[8]
	b)	Explain the Singular Value Decomposition and write its applications.	[7]
2	a)	Define discrete Laplacian of two variables and explain its use in image processing.	[8]
	b)	Define the following terms related to fuzzy sets: (i) Empty set (ii) Equality (iii) Subset (iv) Union (v) Intersection	[7]
3	a)	State and explain Two Dimensional Sampling theorem.	[8]
	b)	Explain about Image Sharpening using ideal high pass filters.	[7]
4	a)	Explain the various order static filters used in image restoration.	[8]
	b)	Explain the concept of inverse filtering. Also write its advantages and disadvantages.	[7]
5	a)	Discuss about Pseudocolor Image Processing.	[8]
	b)	Explain about color slicing.	[7]
6	a)	Draw the diagram of analysis and synthesis filter bank for 2D-fast wavelet transform, and explain it.	[8]
	b)	With an example, explain Run-Length coding.	[7]
7	a)	Explain the morphological opening operation with an example.	[8]
	b)	Explain thinning and Thickening in morphological image processing.	[7]
8	a)	Explain how a line can be detected in an image.	[8]
	b)	Explain image segmentation by using region growing.	[7]