Code No: **RT41043** **R13** **Set No. 1**

IV B.Tech I Semester Supplementary Examinations, February - 2019

DIGITAL IMAGE PROCESSING

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

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any THREE questions from Part-B
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PART–A *(22 Marks)*

1.	a)	Enlist the applications of KL transform.	[4]
	b)	Write short notes on log transformation.	[3]
	c)	Explain the estimation of degradation function by Experimentation.	[4]
	d)	Short note on noise in color images.	[3]
	e)	What do you meant by wavelet packet?	[4]
	f)	Specify some fundamental conditions of segmentation.	[4]

PART–B *(3x16 = 48 Marks)*

2.	a)	Discuss the image acquisition using a single sensor, sensor strips and sensor arrays.	[8]
	b)	What is Hadamard transform? Explain in detail and Write its properties.	[8]
3.	a)	Discuss how the various filter masks are generated to sharpen images in spatial filters.	[8]
	b)	Illustrate homomorphic filtering approach for image enhancement.	[8]
4.	a)	With relevant mathematical expressions, explain how a Wiener filter achieves restoration of a given degraded image.	[8]
	b)	Explain linear position invariant degradation employed for image restoration.	[8]
5.	a)	Explain pseudo color image processing and pseudo color coding approaches.	[8]
	b)	Describe the histogram based processing in color images.	[8]
6.	a)	Discuss sub-band coding with neat sketch.	[8]
	b)	Describe arithmetic coding with an example for compression of image.	[8]
7.	a)	Discuss segmentation using morphological watersheds.	[8]
	b)	Explain Hit-or-Mass transformation technique.	[8]

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