	VASIREDDY VENKATADRI INSTITUTE OF TECHNOLOGY NAMBURU (AUTONOMOUS)	
	YEAR/SEM : IV – B.Tech - I-Sem	NAME OF THE EXAM : MID – I
	SUBJECT : DIP	SUBJECT CODE : R1641042
	BRANCH : ECE	DATE : 23-11-2021


ANSWER ALL QUESTIONS

Set No: 1

Time : 90 Minutes

Max. Marks : 30

			CO	BL	PO	Marks
1.	a.	Explain the fundamental steps in digital image processing which can be applied to images.	1	1	1	5
	b.	Explain about Hadamard transform and determine the Hadamard matrix for order $N = 8$.	1	4	2	5
2.	a.	Explain the use of first derivative for image enhancement by taking a 3×3 region of image using the magnitude of the gradient.	2	3	2	5
	b.	Define histogram equalization. Explain the procedure for histogram equalization.	2	2	1	5
3.	a.	Explain the periodic noise reduction by frequency domain filtering with respect to notch filter.	3	1	1	5
	b.	What is the purpose of image restoration? Explain the model of image degradation and restoration process using suitable block diagram.	3	2	1	5

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ANSWER ALL QUESTIONS

Set No: 2

Time : 90 Minutes

Max. Marks : 30

			CO	BL	PO	Marks
1.	a.	List out the various components used in general purpose image processing system and explain it.	1	1	1	5
	b.	What is the need of image transform? List out various transform used in image processing.	1	2	2	5
2.	a.	Discuss about Log transformation and Power Law transformation, and write their applications.	2	4	2	5
	b.	Discuss about image smoothing in the frequency domain using Butterworth low pass filters.	2	4	1	5
3.	a.	Discuss about image restoration using order static filters.	3	2	2	5
	b.	What is an inverse filtering? Explain how it is useful for image restoration and write the disadvantages of it.	3	1	1	5

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ANSWER ALL QUESTIONS

Set No: 3

Time : 90 Minutes

Max. Marks : 30

			CO	BL	PO	Marks
1.	a.	Discuss the image acquisition using a single sensor, sensor strips and sensor arrays.	1	1	1	5
	b.	Prove the following properties of 2D-DFT: (i) Translation and Rotation (ii) Periodicity	1	4	1	5
2.	a.	Discuss how the various filter masks are generated to sharpen images in spatial filters.	2	3	2	5
	b.	Explain about notch filtering and write the use of it in image processing.	2	2	1	5
3.	a.	Explain about adaptive median filter and write the advantages of it.	3	1	1	5
	b.	Explain about image restoration using minimum mean square error filtering.	3	2	2	5
