Q.P. Code: 16EC432 **R16**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech IV Year I Semester Supplementary Examinations February-2022

DIGITAL IMAGE PROCESSING

(Electronics and Communication Engineering)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	**a**	Explain the components of digital image processing along with the suitable block diagram.	**6M**
	b	Define distance measures in digital image processing? Explain different types of distance measures.	**6M**
		OR	
2	**a**	Discuss the following terms with example: Adjacency, 4-adjacency, 8-adjacency?	**6M**
	b	Explain about image sampling and quantization process with proper steps.	**6M**
		UNIT-II	
3	**a**	Determine the image basis function of Hadamard Transform when N = 4.	**6M**
	b	Outline that KL transform is an Optimal Transform.	**6M**
		OR	
4	**a**	Outline the steps to be followed to calculate KL transform.	**6M**
	b	Determine the image basis function of Walsh Transform when N = 4.	**6M**
		UNIT-III	
5	**a**	Explain the mechanics of spatial filtering with suitable diagram.	**6M**
	b	Illustrate the smoothing filters in frequency domain along with the required expressions.	**6M**
		OR	
6	**a**	Illustrate the smoothing filters in frequency domain along with the required expressions.	**6M**
	b	Define the expressions for LPF and HPF and Label the ideal characteristics.	**6M**
		UNIT-IV	
7	**a**	Explain the inverse filtering for image restoration with relevant equations.	**6M**
	b	Discuss the merits and demerits of inverse filtering.	**6M**
		OR	
8	**a**	Define Image Segmentation and list out the applications of image segmentation.	**6M**
	b	Elaborate the several edge models for edge detection in image segmentation.	**6M**
		UNIT-V	
9	**a**	Define Huffman coding?	**6M**
	b	Illustrate the procedure of the Huffman coding along with suitable example.	**6M**
		OR	
10	**a**	Demonstrate the procedure of the bit plane coding along with suitable example.	**6M**
	b	Compare the variable length coding and arithmetic coding.	**6M**

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