Reg. No.												

Question Paper Code	11769

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2023

Eighth Semester

Electronics and Communication Engineering

EC8093 - DIGITAL IMAGE PROCESSING

(Regulations 2017)

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	Compare four and eight neighbors of pixels.	2,K2,CO1
2.	Define mach band effect.	2,K2,CO1
3.	Define gray level slicing.	2,K2,CO2
4.	List the applications of sharpening filters.	2,K1,CO2
5.	Mention the disadvantages of inverse filtering.	2,K1,CO3
6.	Define image restoration filter.	2,K2,CO3
7.	Distinguish image erosion and dilation.	2,K2,CO4
8.	State image thresholding.	2,K1,CO4
9.	Name any two video compression standards.	2,K1,CO5
10.	Define huffman coding.	2,K2,CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Explain the various steps involved in digital image processing.	13,K1,CO1
		OR	
	b)	Define color models. Explain RGB and HIS color model with necessary diagrams.	13,K1,CO1
12.	a)	Briefly Explain Histogram Equalization techniques.	13,K1,CO2
		OR	
	b)	Compare the performance of ideal, Butterworth and Gaussian filter in frequency domain.	13,K1,CO2
13.	a)	Describe the mathematical model for image restoration.	13.K2,CO3
		OR	

b) Explain in detail about notch filtering operation in image restoration. *13,K2,CO3*

14. a) Discuss about region growing, splitting and merging of black images. *13,K2,CO4*

OR

b) Briefly explain the concept of watershed transformation. *13,K2,CO4*

15. a) Elaborate various JPEG and MPEG standards involved in image compression. *13,K2,CO5*

OR

b) A source emits three symbols a,b,c with a probability {0.5,0.25,0.25} respectively. Construct an arithmetic code to encode the word 'c a b'. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Describe in detail the various Boundary descriptors with a neat diagram. *15,K2,CO6*

OR

b) Explain in detail about Patterns and Pattern Classes. *15,K2,CO6*