Reg. No.												

Question Paper Code	12819

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024

Sixth Semester

Computer Science and Business Systems

20CBEL610 - IMAGE PROCESSING AND PATTERN RECOGNITION

Regulations - 2020

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	What is image acquisition?	2	K1	CO1
2.	State the purpose of morphological processing.	2	K1	CO1
3.	State image negative with an expression.	2	K1	CO2
4.	Distinguish maximum filter and minimum filter.	2	K2	CO2
5.	Define local thresholding for edge detection.	2	K1	CO3
6.	State the advantages and disadvantages of using more than one seed in a region growing technique.	2	K1	CO3
7.	State the need for pixel neighbourhoods.	2	K1	CO4
8.	List the properties of multimodal image registration.	2	K1	CO4
9.	Distinguish brightness and contrast.	2	K2	CO5
10.	Define image noise.	2	K1	CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

			Marks	K – Level	CO
11.	a) i)	Classify the image processing techniques.	7	K2	CO1
	ii)	With a neat diagram explain image sensing and acquisition.	6	K2	CO1
		OR			
	b) i)	Demonstrate digital image representation.	7	K2	CO1
	ii)	Illustrate the effects of non uniform sampling and quantization.	6	K2	CO1
12.	a)	Discuss Histogram equalization in detail.	13	K2	CO2
		OR			
	b)	Explain Spatial Correlation and Convolution.	13	K2	CO2
13.	a)	Explain in detail the various clustering techniques.	13	K2	CO3
		OR			

	b)	Describe about the Edge detection and edge linking methods.	*13*	*K2*	*CO3*
14.	a)	Explain the concept of convex hull in detail.	*13*	*K2*	*CO4*
		OR			
	b)	Explain in detail the concept of interpolation.	*13*	*K2*	*CO4*
15.	a)	Explain CMY colour model.	*13*	*K2*	*CO5*
		OR			
	b)	Explain the pseudo colour image processing in detail.	*13*	*K2*	*CO5*

PART - C (1 × 15 = 15 Marks)

16.	a) i)	Explain in detail the relationship between pixels.	*8*	*K2*	*CO1*
	ii)	Distinguish the different types of thresholding for segmentation.	*7*	*K2*	*CO3*
		OR			
	b) i)	Explain the elements of visual spectrum.	*8*	*K2*	*CO1*
	ii)	Explain split/merge techniques.	*7*	*K2*	*CO3*