Reg. No.												

Question Paper Code	12251

M.E. / M.Tech - DEGREE EXAMINATIONS, NOV / DEC 2023

Third Semester

M.E. - Big Data Analysis

20PBDEL305 - IMAGE PROCESSING AND ANALYSIS

(Regulations 2020)

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level,CO
1.	Define histogram equalization.	*2,K1,CO1*
2.	List the fuzzy techniques for spatial filtering.	*2,K1,CO1*
3.	Identify the different type of derivative filters in image Processing.	*2,K2,CO2*
4.	Categorize the various frequency domain filters.	*2,K2,CO2*
5.	Write about gradient operators.	*2,K1,CO3*
6.	List the uses of region growing methods.	*2,K1,CO3*
7.	Write the Advantages of Harris interest point operator.	*2,K1,CO4*
8.	Define corner orientation local invariant feature detectors and descriptors.	*2,K2,CO4*
9.	What is pseudo colors?	*2,K2,CO5*
10.	Compare image compression models with basic compression methods.	*2,K2,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Describe in detail about fuzzy techniques for spatial filtering and discuss how to remove noise.	*13,K2,CO1*
		OR	
	b)	Develop the basics to explain with example for Spatial smoothening and Spatial sharpening.	*13,K2,CO1*
12.	a)	Write detail note about Spatial and Frequency domain enhancement and explain discrete Fourier transform in details.	*13,K3,CO2*
		OR	
	b)	Identify the role of multi resolution expansion and explain in detail about filtering – frequency domain noise filters wavelets.	*13,K3,CO2*

13. a) What do you mean by optimal thresholding in detail and how do you obtain the threshold for image processing and tabulate the different types of thresholding for segmentation. *13,K3,CO3*

OR

b) Summarize about the histogram concavity edge detection with suitable diagram. *13,K3,CO3*

14. a) Demonstrate and Discuss about the texture analysis of gray scale image. *13,K4,CO4*

OR

b) Describe in detail about Laws' texture energy approach with suitable example. *13,K4,CO4*

15. a) Evaluate the various colour models. Explain each of them in detail. *13,K4,CO5*

OR

b) Discuss the need for image compression. How run length encoding approach is used for compression? Justify. *13,K4,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Define filtering and Describe in detail about frequency domain noise filters wavelets. *15,K3,CO6*

OR

b) Discuss the following with suitable example *15,K3,CO6*

(i) Corner and interest point detection

(ii) Template matching