Reg. No.												

Question Paper Code	11537

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022

Fifth Semester

Artificial Intelligence and Data Science

20AIPC501 - COMPUTER VISION

(Regulations 2020)

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	Define Computer Vision.	*2,K1,CO1*
2.	What is meant by Mathematical morphology?	*2,K1,CO1*
3.	Differentiate between Euclidean Affine and Projective.	*2,K2.,CO2*
4.	List some properties of Fourier transforms.	*2,K1,CO2*
5.	What is Hough transform?	*2,K1,CO3*
6.	State any two differences between Gaussian derivative filters and Gabor Filters	*2,K2,CO3*
7.	Categorize the Region Growing Segmentation Technique.	*2,K1.CO4*
8.	What is Parametric motion? How it is different (any one reason) from spline-based motion?	*2,K1,CO4*
9.	Define K-Means and K-Medoids.	*2,K1,CO5*
10.	List two Supervised classifiers with definition.	*2,K1,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Explain in detail about Image Formation and Sensing.	*13,K1,CO1*
		OR	
	b)	Explain in detail about Binary Image Processing.	*13,K1,CO1*
12.	a)	Briefly explain about the following transformation (i) Orthogonal (ii) Euclidean Affine	*13,K1,CO2*
		OR	
	b)	Briefly explain about Convolution and Filtering.	*13,K1,CO2*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

13. a) Describe the idea behind performing Histogram equalization. *13,K1,CO3*

OR

b) Explain in detail about Corner based detectors: *13,K1,CO3*
(i) Harris
(ii) Hessian Affine

14. a) What is the objective of image segmentation? Explain any one of the region-based image segmentation technique in detail. Mention two applications of image segmentation. *13,K2,CO4*

OR

b) What is Spline based motion. Explain in detail about spline-based motion with Medical Image Registration. *13,K2,CO4*

15. a) With an application do comparative analysis between K-Means, K-Medoids, Mixture of Gaussians clustering technique. *13,K2,CO5*

OR

b) With an application do comparative analysis between Bayes, KNN and ANN classifier. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Discuss the classifiers KNN and Bayes models in detail. *15,K2,CO6*

OR

b) Compare PCA, ICA, LDA in detail. *15,K3,CO6*