

Roll No.

Total Pages : 3

46311

BT-6/M-23

COMPUTER VISION

Paper-PC-CS-AIML-310A

Time : 3 Hours]

[Maximum Marks : 75

Note : Attempt **five** questions in all, selecting at least **one** question from each unit. All questions carry equal marks.

UNIT-I

1. (a) How corner can be detected from 2D image? Explain in detail. (7)
- (b) What is image Processing? Explain any *two* methods in detail. (8)
2. (a) Explain image Formation sensing using thresholding. (7)
- (b) Write Short notes on image Sampling and Binary image analysis/ (8)

UNIT-II

3. (a) List various edge and Corner detection methods and explain any *one* in detail. (7)

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- (b) Explain dilation and erosion morphological operations. Also write applications of both. (8)
4. (a) What do you mean by feature descriptor of image? Discuss various similarity measures. (7)
- (b) Explain Hough Transforms object recognition method. (8)

UNIT-III

5. (a) How does the Histogram equalization process enhance the image? Explain in detail. (7)
- (b) Discuss about the terms CVIP tools, Shape, Color and similarity measures in detail. (8)
6. (a) What is texture? Explain any *one* method used to describe the texture of an image. (7)
- (b) What are distance measures? State any *two* properties of a similarity measure. Mention any two examples for dissimilarity measures, with equations. (8)

UNIT-IV

7. (a) State the K-Means algorithm for clustering. Apply K-Means algorithm on the following data set to obtain two clusters : (1, 1), (1.5, 2), (3, 4), (5, 7), (3.5, 5), (4.5, 5) and (3.5, 4.5). (7)

- (b) Differentiate supervised, unsupervised, and semi-supervised learning. Justify with example. (8)
8. (a) Explain Gaussian Mixture Model and Hidden Markov Model. Explain with Example. (7)
- (b) List various Dimensionality reduction techniques and explain any *one* in detail. (8)

