

2025

M.Sc. 1st Semester Examination

COMPUTER SCIENCE

Paper : COSE405B8

(Pattern Recognition & Image Processing Lab)

(Practical)

Full Marks : 15

Time : One Hour

The figures in the margin indicate full marks.

Answer any *one* question : 10×1=10

(Choose the question on the lottery basis)

1. Write a program to implement the K-Nearest Neighbour (K-NN) classifier and classify a given dataset using different values of k.

2. Write a program to implement K-Means clustering and visualize the clusters for a given dataset.

(2)

3. Write a program to implement Hierarchical Clustering using single-linkage and complete-linkage methods for a given dataset.
4. Write a MATLAB program to extract different attributes of an image, such as image size, intensity range, and histogram.
5. Write a MATLAB program for image negation and display the original and negated images.
6. Write a MATLAB program for Histogram Mapping and Histogram Equalization of a grayscale image.
7. Write a MATLAB program for image smoothening and sharpening using appropriate spatial filters.

(3)

8. Write a MATLAB program for edge detection using Sobel and Prewitt operators and compare the results.

9. Write a MATLAB program for morphological operations on binary images such as dilation, erosion, opening, and closing.

Practical Notebook : 02 and Viva-voce : 03
