PG/IS/COS/195 M2/23(Pr.)

M.Sc. 1st Semester Examination, 2023

COMPUTER SCIENCE

(*Digital Image Processing Lab*)

PAPER – COS-195M2

Full Marks : 25

Time : 2 hours

The figures in the right hand margin indicate marks

Answer any **one** question : 20×1

1. Write a program (in MATLAB) to read an image and display its property.

2. Write a program (in MATLAB) to display an image.

3. Write a program (in MATLAB) to write an image variable as image.

4. Write a program (in MATLAB) to enlarge an image to its double size.

5. Write a program (in MATLAB) to rotate an image in clockwise and anticlockwise direction.

6. Write a program (in MATLAB) to convert an rgb image to gray scale image.

7. Write a program (in MATLAB) to implement the

   (*a*) Basic Gray Level Transformation

   (*b*) Image Negative

   (*c*) Log Transformation

   (*d*) Power Law Transformation

   (*e*) Piecewise Linear Transformation (Contrast Stretching)

8. Write a program (in MATLAB) to generate Histogram for an Image and plot histogram in various ways (imhist, bar, stem, plot).

9. Write a program (in MATLAB) to perform Histogram Equalization.

10. Write a program (in MATLAB) to implement Arithmetic and Logical operation

    (*a*) Image Subtraction

    (*b*) Image Averaging.

11. Write a program (in MATLAB) to implement (Smoothing Spatial Filters)

    (*a*) Linear filter (Standard Average/BOX, Weighted Average)

    (*b*) Ordered Statistic (Median).

12. Write a program (in MATLAB) to implement (Sharpening Spatial Filters)

    (*a*) Laplacian

13. Write a program (in MATLAB) to implement Smoothing (Lowpass) Frequency Domain Filters.

14. Write a program (in MATLAB) to implement Sharpening (Highpass) Frequency Domain Filters.

15. Write a program (in MATLAB) to implement Homomorphic filter.

Note : For each program block size is 1

Marks Distribution

Coding	: 12 Marks
Output	: 02 Marks
Discussion	: 06 Marks
Viva	: 05 Marks