

This question paper contains 2 printed pages|

**NY—63—2023**

**FACULTY OF SCIENCE AND TECHNOLOGY**

**M.Sc. (Second Year) (Fourth Semester) EXAMINATION**

**NOVEMBER/DECEMBER, 2023**

**(New/CBCS Pattern)**

**COMPUTER SCIENCE**

**Paper-CS-401**

**(Digital Image Processing)**

**(Wednesday, 6-12-2023)**

**Time : 2.00 p.m. to 5.00 p.m.**

*Time—3 Hours*

*Maximum Marks—75*

*N.B. :— (i) All questions are compulsory.*

*(ii) All questions carry equal marks.*

*(iii) Figures to the right indicate full marks.*

*(iv) Assume your own data, wherever necessary.*

1. (a) What is Digital Image processing (DIP) ? Explain different steps in Digital Image Processing. 15

*Or*

(b) Explain the function to read and display images in DIP using matlab. 8

(c) Explain elements of Visual perception system. 7

2. (a) Explain Digital Image representation. Explain different image types used in Digital Image Processing. 15

*Or*

(b) Explain different data classes used in Digital Image Processing system. 8

(c) Explain components of DIP. 7

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3. (a) What is intensity transformation functions ? Explain image negative and log transformation function with example. 15

Or

(b) Explain spatial filtering techniques used in digital image processing with example 8

(c) Write a note on histogram equalization in DIP. 7

4. (a) What is noise in DIP ? Explain different noise model discussed in DIP. 15

Or

(b) Explain 2D-discrete Fourier transformation with example. 8

(c) Explain color models used in color image processing. 7

5. Write short notes on any *three* of the following : 15

(a) Properties of noise

(b) Image sampling

(c) Electro-magnetic spectrum

(d) Wavelet processing

(e) Histogram processing.

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