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ND—08—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Third Year) (Sixth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

(CBCS/Revised Pattern)

COMPUTER SCIENCE

(Fundamentals of Digital Image Processing)

(Friday, 1-12-2023)

Time : 10.00 a.m. to 1.00 p.m.

Time—3 Hours

Maximum Marks—75

N.B. :— (i) All questions carry equal marks.

(ii) Figures to the right indicate full marks.

1. Attempt any *five* of the following : 15

- (a) What is Digital Image Processing ? Explain it.
- (b) Explain matrix representation in digital image representation.
- (c) Explain color image representation in image processing.
- (d) Explain CMY color model in image processing.
- (e) Explain RGB color model in image processing.
- (f) Define noise models in image restoration.
- (g) Explain multidimensional array.

P.T.O.

2. Attempt any *three* of the following : 15

- (a) Explain applications of image processing.
- (b) Explain fundamental steps in digital image processing.
- (c) Explain elements of visual perception in detail.
- (d) How to represent digital images in computer ? Explain it.
- (e) How to reading, displaying and writing of images ? Explain it.

3. Attempt any *three* of the following : 15

- (a) Explain sampling and quantization digital image processing.
- (b) What is image ? Explain types image in detail.
- (c) Explain full color image processing in detail.
- (d) Explain pseudo color image processing in detail.
- (e) What is histogram ? Explain types of histogram.

4. Attempt any *three* of the following : 15

- (a) Explain basic intensity transformation function using in adjust.
- (b) Explain histogram equalization in detail.
- (c) Explain advantages and disadvantages of MATLAB.

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- (d) Explain MATLAB environment in detail.
- (e) What is MATLAB operator ? Explain in detail.

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

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- (a) Data class
- (b) HSV color model
- (c) Neighbourhood
- (d) fspecial () and imfilter()
- (e) Array operation.

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