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SF—27—2022

FACULTY OF SCIENCE AND TECHNOLOGY

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

MAY/JUNE, 2022

(CBCS/Rev. Pattern)

COMPUTER SCIENCE

Paper (BCS-602)

(Fundamentals of Image Processing)

(Saturday, 2-7-2022)   **Time : 9.30 a.m. to 1.15 p.m.**

Time— 3.45 *Hours*   *Maximum Marks*—75

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

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

(*iii*)   Assume suitable data, if required.

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.

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 representing digital images in computer ? Explain it.

(*e*)   How to reading, displaying and writing of images ? Explain it.

P.T.O.

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 procesing 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 imadust.

    (*b*) Explain histogram equalization in detail.

    (*c*) Explain advantages and disadvantages of MATLAB.

    (*d*) Explain MATLAB environment in detail.

    (*e*) What is MATLAB operator ? Explain in detail.

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

    (*a*) Data class

    (*b*) HSV color model

    (*c*) Neighbourhood

    (*d*) fspecial ( ) and imfilter ( ).

    (*e*) array operation.