This question paper contains **2** printed pages]

## AA—45—2019

### FACULTY OF COMPUTER STUDIES

**B.Sc. (CS) (Sixth Semester) EXAMINATION**

**OCTOBER/NOVEMBER, 2019**

**(CBCS Pattern)**

COMPUTER SCIENCE

(S6.CC.3)

(Digital Image Processing)

**(Friday, 22-11-2019)**           **Time : 10.00 a.m. to 1.00 p.m.**

*Time*—3 Hours           *Maximum Marks*—75

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

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

     (*iii*)   Assume suitable data, if required

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

   (*a*)   Explain reading, displaying images.

   (*b*)   Write a short note on variables and arrays.

   (*c*)   Explain with syntax and example imnoise().

   (*d*)   Write a short note on MATLAB scratch pad.

   (*e*)   Explain with syntax and example imhist().

   (*f*)   Write a short note on command window.

   (*g*)   Explain *f*special() function.

2.   Attempt any *two* of the following :           10

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

   (*b*)   Explain elements of Digital Image processing system.

   (*c*)   Explain Multidimensional arrays.

P.T.O.

3. Attempt any *two* of the following : 10

    (*a*)    Explain intensity transformation functions.

    (*b*)    Explain in detail histogram processing and function plotting.

    (*c*)    Explain data classes.

4. Attempt any *two* of the following : 10

    (*a*)    Explain in detail non-linear spatial filter.

    (*b*)    Explain Image types.

    (*c*)    Explain a model of Image degradation/Restoration process.

5. Attempt any *two* of the following : 10

    (*a*)    Explain Noise Models.

    (*b*)    Explain Restoration techniques.

    (*c*)    Explain RGB color model.

6. Attempt any *two* of the following : 10

    (*a*)    Explain HSV color model.

    (*b*)    Explain in detail Discrete Fourier Transformation (DFT).

    (*c*)    Explain computing and visualizing 2D-DFT.

7. Attempt any *two* of the following : 10

    (*a*)    Explain in detail ideal filter.

    (*b*)    Explain Geometric Transformation function.

    (*c*)    Explain spatial filtering of color images.

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