

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

BR—409—2016

FACULTY OF COMPUTER STUDIES

M.Sc. (Third Semester) EXAMINATION

OCTOBER/NOVEMBER, 2016

(Revised Course)

COMPUTER SCIENCE

(S-3.4)

(Digital Image Processing Using MATLAB)

(Wednesday, 23-11-2016)

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

Time—Three Hours

Maximum Marks—100

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

(ii) Figures to the right indicate full marks.

(iii) Use suitable data if necessary.

1. (a) Explain the elements of DIP system. 10

(b) Explain different data classes and their conversions in detail. 10

Or

(c) Explain the elements of visual perception. 10

(d) Explain a model of image degradation/restoration process. 10

2. (a) Explain imadjust function with example. 10

(b) Explain spatial filtering with correlation and correlation methods. 10

Or

(c) What is noise ? Explain all its types. 10

(d) Explain how to compute and visualize 2D DFT in MATLAB. 10

3. (a) Explain how to read, write and display images in MATLAB. 10

(b) Explain how to convert RGB to gray scale and RGB to indexed images with example. 10

P.T.O.

Or

- (c) Write and explain fast wavelet transform. 10
 - (d) Explain light and electromagnetic spectrum. 10
 - 4. (a) Explain how to obtain frequency domain filters from spatial domain. 10
 - (b) Explain how to process image histograms in MATLAB. 10
- Or*
- (c) Explain image types in detail. 10
 - (d) Explain the sampling and quantization process of an image. 10
 - 5. Write short notes on any *four* : 20
 - (i) Variables and arrays
 - (ii) MATLAB environment
 - (iii) Imfilter function
 - (iv) Image serving
 - (v) Color spaces
 - (vi) HSV.