

**M.Sc. (MATHEMATICS WITH APPLICATIONS IN COMPUTER SCIENCE)**

**M.Sc. (MACS)**

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**Term-End Practical Examination**

**December, 2014**

**MMTE-003(P) : PATTERN RECOGNITION AND IMAGE PROCESSING**

*Time :  $1\frac{1}{2}$  hours*

*Maximum Marks : 40*

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**Note :** *This question paper has **two** questions worth 30 marks. Remaining 10 marks are for the vive-voce. Sci-Lab is to be used.*

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1. Load an image of size  $512 \times 512$ . Blur it using Gaussian averaging and add exponential noise to it.
    - (i) Try and estimate the degradation and noise from the distorted image.
    - (ii) Compare the estimated degradation with the actual degradation. 20
  
  2. Load a bmp image of size  $512 \times 512$ . Change the number of gray levels to 64, 16, 8, 4, 2 to display the same image. Comment on the observations. 10
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