

**R09****Code: 9A04802**

B.Tech IV Year I Semester (R09) Regular &amp; Supplementary Examinations December 2015

**DIGITAL IMAGE PROCESSING**  
(Electronics & Computer Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions  
All questions carry equal marks

\*\*\*\*\*

- 1 (a) What is the need for non-uniform sampling?  
(b) Describe about relationships between pixels.
- 2 Verify that, if an image  $f(x, y)$  with dimensions  $M \times N$  is multiplied by checkerboard pattern then its DFT is centered at half the maximum size.
- 3 Discuss about spatial domain high pass filtering used in image enhancement.
- 4 Discuss about image smoothing using frequency domain techniques.
- 5 (a) Discuss about constrained least square image restoration.  
(b) Explain about Wiener filtering.
- 6 Explain how region splitting and merging are useful in image segmentation, give suitable example for it.
- 7 (a) Obtain the Huffman code for the word HELLO.  
(b) Discuss the classification of image compression schemes.
- 8 Explain the need for Chromaticity diagram in color image processing.

\*\*\*\*\*