

Code: 9A04802

R09

B.Tech IV Year II Semester (R09) Advanced Supplementary Examinations, July 2013

**DIGITAL IMAGE PROCESSING**

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- 1 (a) Explain about fundamental steps in digital image processing.  
(b) Explain about the basic relationships and distance measures between pixels in a digital image.
- 2 (a) Explain the properties of Hadamard transform.  
(b) Discuss the properties of 2D FFT.
- 3 (a) Discuss the mechanics of filtering in spatial domain.  
(b) Explain contrast stretching and bit plane slicing.
- 4 (a) Explain how derivative helps to derive tools for image sharpening.  
(b) Explain about local enhancement.
- 5 (a) Explain about least mean square filter used for image restoration.  
(b) Explain about constrained least squares restoration process.
- 6 (a) Explain about region based segmentation.  
(b) Discuss approaches for implementing first and second order digital derivatives for the detection of edges in the image.
- 7 (a) What is the drawback of Huffman encoding process? How is it overcome in arithmetic encoding process? Explain with example.  
(b) Explain the LZW coding with example.
- 8 (a) Explain about pseudo color image processing.  
(b) Explain the process of converting colors from RGB to HIS and vice-versa.

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