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10CS/IS762

Seventh Semester B.E. Degree Examination, Dec.2015/Jan.2016
Digital Image Processing

Time: 3 hrs.

Max. Marks: 100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. Define image. Explain the steps involved in digital image processing with block diagram. (14 Marks)
b. Explain the low level processing concept in image processing. (06 Marks)
- 2 a. With the help of algorithm, write how histogram equalization is performed. (10 Marks)
b. Explain the different stages in geometric transformation. (10 Marks)
- 3 a. Define threshold. Write algorithm for iteration threshold selection. (10 Marks)
b. Explain image segmentation. (10 Marks)
- 4 a. Define Region Merging. Write a algorithm for region merging via boundary melting. (08 Marks)
b. With the help of algorithm, explain split and merge algorithm. (12 Marks)

PART – B

- 5 a. With the help of block diagram, explain homographic system. (10 Marks)
b. Explain how ideal band pass and Butterworth band pass filter is done for filtering. (10 Marks)
- 6 a. Explain different error-free lossy compression techniques. (10 Marks)
b. Explain Noisless coding theorem. (10 Marks)
- 7 a. Explain shape description methods. (10 Marks)
b. Write an algorithm for 4-Neighbourhood and 8-Neighbourhood region. (10 Marks)
- 8 a. Explain the concept of opening and closing related to Morphology. (08 Marks)
b. Explain the concept of Binary Morphological Segmentation. (06 Marks)
c. Explain Hit and Miss transformation. (06 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and or equations written eg, 42+8 = 50, will be treated as malpractice.