

Code No: 09A70407

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, June/July - 2014

DIGITAL IMAGE PROCESSING

(Common to ECE, ETM)

Time: 3 Hours

Max. Marks: 75

Answer any Five Questions.

All Questions Carry Equal Marks

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- 1.a) Define a digital image. Distinguish between a gray level and binary image.
- b) Obtain Haar Transform matrix for $N=8$ and list the properties.
- 2.a) What is meant by image enhancement by point processing? Discuss different methods of Point Processing.
- b) Show that histogram equalization method gives uniform histogram for continuous images.
- 3.a) Discuss Image Smoothing with the following:
 - i) Low Pass Filtering
 - ii) Median Filtering.
- b) Explain the basics of filtering in the frequency domain.
- 4.a) Explain the model of image degradation/restoration. Discuss about the principle sources of noise in digital images.
- b) Write a brief notes on Inverse Filtering.
- 5.a) Discuss approaches for implementing first and second order digital derivatives for the detection of edges in the image.
- b) What is Thresholding? Explain about Global Thresholding.
- 6.a) Define Image Compression. Explain about Data Redundancy. What are the different types of data redundancy?
- b) Explain method of generating variable length codes with an example.
7. Discuss about Wavelet Thresholding Techniques.
8. Give an Overview of Digital Water Marking Techniques.

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