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Code No: B7708

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH II SEMESTER EXAMINATIONS, APRIL/MAY 2012
IMAGE AND VIDEO PROCESSING
(EMBEDDED SYSTEMS AND VLSI DESIGN)

Time: 3hours **Max.Marks:60**

Answer any five questions
All questions carry equal marks
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1.a) Discuss about linear, logarithmic and power law grey level transformations and explain one technique for each case.
b) Explain about Wiener filtering in detail.

2.a) Explain how gray level and color digital images are represented mathematically and relate their representations.
b) Describe the smoothing and sharpening filtering methods for gray level as well as color digital images.

3.a) What is the link between morphological dilation, erosion, opening and closing Explain the operations in detail.
b) Explain the Hit or Miss transformation.

4.a) Describe the region splitting and merging algorithm.
b) Discuss about the segmentation by morphological watersheds.

5.a) What is the process for forming the composite color video signal? How one should select the color and audio subcarrier frequencies?
b) Describe the sampling schemes for video in two dimensions.

6.a) Differentiate the scene and object models in video processing.
b) Discuss about different pixel based motion estimation algorithms.

7.a) Explain the principle of vector quantization and discuss about the lattice and optimal vector quantizers.
b) Discuss about DCT based video coding.

8. Answer any TWO
a) Pseudo color image processing
b) Digital video
c) Region based motion estimation in video

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