R09

Code No: C6104, C6504

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech I - Semester Examinations, March/April 2011
IMAGE AND VIDEO PROCESSING
(COMMON TO COMMUNICATION SYSTEMS, WIRELESS AND MOBILE COMMUNICATIONS)

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

Answer any five questions
All questions carry equal marks

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1.a) Discuss about 'False contouring' and 'checker board' effects in Digital Image Processing
b) Compute the Discrete cosine transform (DCT) Kernel for N = 4. [12]

2.a) With the help of suitable example explain the Histogram specification.
b) With the help of the block diagram explain about Homomorphic filtering. [12]

3.a) Discuss about various edge detection methods, and list their merits and demerits.
b) Explain the 'Region split and merge' algorithm with the help of example. [12]

4.a) With the help of block diagram explain about lossless and lossy compression Models.
b) Perform the arithmetic coding for the following data. [12]

Data	Probability
a_1	0.2
a_2	0.4
a_3	0.2
a_4	0.2

5.a) Explain the basic steps of video processing with the help of block diagram.
b) Discuss the sampling of Video signals. [12]

6. Discuss in detail about any four methods of 2-D motion estimation techniques in video processing. [12]

7.a) Compare wave form based coding and block based transform coding techniques.
b) Explain the predictive coding for Video. [12]

8. Write short notes on the following
a) JPEG Standards
b) Basic relationships between pixels
c) Threshold based Image segmentation. [12]

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