R09

Code No: D3801, D7001, D4503

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech II - Semester Examinations, March/April 2011
IMAGE AND VIDEO PROCESSING
(COMMON TO DIGITAL ELECTRONICS & COMMUNICATION SYSTEMS, ELECTRONICS & COMMUNICATION, SYSTEMS & SIGNAL PROCESSING)

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

Answer any five questions
All questions carry equal marks

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1. a) Justify the need of sampling and quantization in digital image processing.
   b) Compute the memory required to store an image of resolution 640 x 400 and quantized using 256 grey levels. [12]

2. What is Wavelet? Describe the discrete wavelet transformation with suitable mathematical approach for improving the digital Image qualities. [12]

3. a) Explain in detail about the histogram equalization and its need.
   b) Distinguish between Image smoothing and Image sharpening. [12]

4. a) Justify the role of Split and Merge approach for region based segmentation
   b) What is the significance of morphological operations like Dilation and Erosion? [12]

5. a) Compare the features of loss less compression and lossy- compression approaches.
   b) Illustrate the Huffman coding with an example. [12]

6. Explain in detail about the fundamental steps of Video processing. [12]

7. What are the various motion estimation models? Explain the Mesh based motion estimation and global estimation model. [12]

8. Write a short note on any **THREE** of the following
   a) Video stabilization
   b) Predictive coding
   c) LZW coding
   d) Salt pepper noise & Median filtering [12]

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