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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