R09

Code No: D5508, D5706

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD M.Tech II - Semester Examinations, March/April 2011 IMAGE AND VIDEO PROCESSING (COMMON TO EMBEDDED SYSTEMS, VLSI SYSTEM DESIGN)

Time: 3hours Max. Marks: 60 **Answer any five questions** All questions carry equal marks 1. Explain in detail about the fundamental steps in Digital image processing. [12] 2. Distinguish between image sharpening and smoothing. Explain any two techniques to achieve Image smoothing. [12] 3. a) Explain the role of frequency domain techniques for image enhancement. b) What is histogram normalization? Explain how to achieve high contrast image using histograms. [12] 4. a) Explain the image degradation model. b) Illustrate the Arithmetic, LIYV coding techniques. [12] 5. What is the need of Video stabilization and explain the techniques to achieve the same. [12] 6. a) Explain the 2D-motion estimation of video frames. b) Distinguish between pixel based motion estimation and Mesh based motion estimation Techniques. [12] 7. Write short note on i) Predictive Wavelet coding ii) Bit-plane slicing in image enhancement [12] 8. Define the terms [12] i) Discrete Fourier Transformation ii) Laplacian operator with respect to image processing iii) Hit and Miss transform
