Roll No.

Total No. of Pages : 02

Total No. of Questions : 08

INSTRUCTIONS TO CANDIDATES :

Ph.D in Faculty of Engineering (ECE) IMAGE AND VIDEO PROCESSING M.Code : 77369

Time : 3 Hrs.

Max. Marks : 100

- 1. Attempt any FIVE questions out of EIGHT questions.
- 2. Each question carry TWENTY marks.
- Q1 a) Justify the need of sampling and quantization in digital image processing.

b) Explain basic steps of Image processing system.

Q2 a) Explain Discrete wavelet transform. How it can help to improve quality of image?

b) Distinguish between Image smoothing and Image sharpening.

Q3 a) Differentiate between lossless compression and lossy compression approaches.

b) Explain run length coding with example.

Q4 a) Explain Time varying image formation models.

b) Explain in detail about the fundamental steps of Video processing.

- Q5 a) What are the various motion estimation models? Explain the Mesh based motion estimation.
 - b) Explain applications of motion estimation in video coding.
- Q6 a) How sampling is done for video signals.
 - b) What is histogram matching? Discuss.
- Q7 a) Which criteria highlight certain features of the interest? Explain about it.
 - b) Explain the properties of Weiner filter.

- Q8 a) Illustrate the huffman coding with an example.
 - b) Explain the following terms :
 - i) Digital Noise
 - ii) Segmentation
 - iii) Video signal
 - iv) Optical flow

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.