

C.U.SHAH UNIVERSITY

Winter Examination-2015

Subject Name: Advance Image Processing

Subject Code: 5TE01AIP1

Branch: M.Tech(EC)

Semester: 1

Date:26/12/2015

Time: 10:30 To 1:30

Marks: 70

Instructions:

- (1) Use of Programmable calculator and any other electronic instrument is prohibited.
 - (2) Instructions written on main answer book are strictly to be obeyed.
 - (3) Draw neat diagrams and figures (if necessary) at right places.
 - (4) Assume suitable data if needed.
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SECTION – I

- Q.1 Attempt the Following questions 07**
- (a) What is the goal of Digital Image Processing?
 - (b) What is Gray level resolution?
 - (c) What is Spatial resolution?
 - (d) Define Point processing.
 - (e) What is the storage requirement of 1024 X 1024, 8 levels Gray scale Image?
 - (f) Define inter pixel redundancy.
 - (g) What is the Full form of MPEG?
- Q.2 (a) Explain image Sampling & Quantization. 06**
(b) Explain high and low pass filtering in frequency domain with necessary equation. 08
- OR**
- Q.2 (a) Derive high pass filter in spatial domain with filter mask. 06**
(b) What is histogram equalization? Explain. 08
- Q.3 (a) Explain image merging and splitting technique. 06**
(b) Enlist Gray level transformation techniques used for image enhancement. 08
Explain any one in detail.
- OR**
- Q.3 (a) What is Image Wrapping? Explain. 07**
(b) What is image segmentation? Explain region growing process. 07



SECTION – II

- Q.4 **Attempt the Following questions** **07**
- (a) What is the Histogram?
 - (b) Define term: Stereo vision
 - (c) What is edge?
 - (d) How skeletonization is useful in Digital Image Processing?
 - (e) What is the difference between Image Enhancement and Image Restoration process?
 - (f) What is Binary Image?
 - (g) What is Lossy and Lossless compression?
- Q.5 (a) Explain Fundamental steps in Image Processing. **08**
(b) Explain homomorphic filtering. **06**
- OR
- Q.5 (a) Explain the concept of Laplacian and LoG for edge detection and Comment on comparison of both the operators. **07**
(b) Explain human visual system. **07**
- Q.6 (a) Explain Dilation and Erosion process. **08**
(b) Explain Optical flow base motion estimation. **06**
- OR
- Q.6 (a) Explain morphological Hit-or-Miss transform for shape detection. **07**
(b) Explain 3D imaging techniques. **07**

