

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER – I (New)– EXAMINATION – WINTER-2019

Subject Code: 3710506

Date: 06-01-2020

Subject Name: Advance Image Processing

Time: 02:30 PM TO 05:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is Histogram? Explain Histogram equalization. 07
(b) Explain statistical operators for image processing in brief. 07
- Q.2** (a) Explain Prewitt and Sobel edge detection operators. 07
(b) Give comparison of various edge detection operators. 07
- OR**
- (b) Explain Laplacian of Gaussian operator. 07
- Q.3** (a) Explain the concept of Phase congruency technique and justify how it is better compared to conventional edge detector techniques. 07
(b) Explain shape extraction by thresholding and subtraction method. 07
- OR**
- Q.3** (a) Explain basic concept of snakes. Define greedy algorithm for snakes in brief 07
(b) Explain Generalized Hough Transform (GHT) in detail. 07
- Q.4** (a) Explain basic region descriptors in detail. 07
(b) Explain slicing the data set for 3D visualization. 07
- OR**
- Q.4** (a) Define Texture. Explain different texture descriptor techniques in brief. 07
(b) Explain Image segmentation in detail. 07
- Q.5** (a) Write difference between volume imaging and sections. 07
(b) Explain high resolution tomography. 07
- OR**
- Q.5** (a) Explain defects in reconstructed images. 07
(b) Explain the concept of stereo viewing in detail. 07