Seat No.:	Enrolment No

GUJARAT TECHNOLOGICAL UNIVERSITY ME SEMESTER – I EXAMINATION – SUMMER 2017

Subject Code: 2710506 Date: 09/05/2017 Subject Name: ADVANCED IMAGE PROCESSING Time:02:30 p.m. to 05:00 p.m. **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 07 Q.1 (a) Explain Averaging & Gaussian Averaging with suitable example. (b) Explain Hough transform for detection of line with Cartesian Parameterization. **07** Also discuss the problems associated with this method. Define Curvature. How curvature in Image is detected? 07 **Q.2** (a) Explain Low level feature extraction by phase Congruency. 07 (b) Explain different approaches used for region/Patch Analysis. 07 **Q.3** What is image classification? Explain k-Nearest neighbourhood classification 07 (a) with suitable example. Explain Template matching in detail with advantage and disadvantage. **07 (b)** What is 3D tomography? Compare it with high resolution tomography. **Q.3** (a) 07 What are the different techniques of shape skalatonization? Discuss in detail. 07 **(b)** Describe different boundary descriptors. 07 **Q.4** (a) Define Texture. Explain structural approach used for texture description in brief. 07 **(b)** How moment describes shape's layout. Explain different moments in details. 07 0.4 (a) How image motion can be detected? Discuss different motion detection 07 approaches using feature extraction. Explain Different Point processing Techniques. **Q.5** (a) 07 Explain slicing the data set for 3D visualization. 07 **(b)** Explain Different Morphological operations with suitable example. Q.5 07 (a) **(b)** Write note on Volumetric display in 3-D Visualization. **07**
