

**GUJARAT TECHNOLOGICAL UNIVERSITY****ME – SEMESTER –II-(New)-EXAMINATION – SUMMER-2019****Subject Code: 3720219****Date: 30/05/2019****Subject Name: Computer Vision****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) Enlist Computer Vision applications and explain any two in detail. **07**  
(b) Differentiate Supervised, Un-supervised, Semi-supervised learning. **07**
- Q.2** (a) Discuss various corner detection methods in brief. **07**  
(b) Explain Canny edge detector algorithm. **07**  
OR  
(b) Explain Hough Transform. **07**
- Q.3** (a) Name two morphological operations and explain them with examples. **07**  
(b) Write a note on shape based feature extraction. **07**  
OR
- Q.3** (a) Discuss active contour technique for Segmentation. **07**  
(b) Describe the process of Histogram equalization. What purpose does it serve? **07**
- Q.4** (a) What do you understand by geometric transformation with respect to image pre-processing? Explain with examples. **07**  
(b) Explain Wiener filter. **07**  
OR
- Q.4** (a) Explain principal component analysis. **07**  
(b) Discuss about the terms Radiance, Irradiance and Radiosity in detail. **07**
- Q.5** (a) Explain K-means and Gaussian Mixture Model **07**  
(b) Discuss recent trends in activity recognition. **07**  
OR
- Q.5** (a) Explain various classifiers in brief. **07**  
(b) What is computational Photography? Explain the components of imaging pipeline in brief. **07**

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