

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (Old) EXAMINATION – WINTER 2019****Subject Code: 173101****Date: 03/12/2019****Subject Name: Soft Computing****Time: 10:30 AM TO 01:00 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) Define Soft computing. Explain its importance. How is Soft computing different from Hard Computing? **07**
- (b) Discuss back propagation networks in detail with neat sketches. **07**
- Q.2** (a) Discuss various fuzzy set operations with appropriate examples. **07**
- (b) Compare Supervised and Unsupervised learning. **07**
- OR**
- (b) What is genetic algorithm? How it is different from traditional algorithm. **07**
- Q.3** (a) Explain soft computing characteristics. **07**
- (b) Explain the working of artificial neuron and explain how it differs from biological neuron. **07**
- OR**
- Q.3** (a) Write a short note on rough set theory. **07**
- (b) Explain working of competitive learning. Discuss its limitations. **07**
- Q.4** (a) Describe learning vector quantization with suitable example. **07**
- (b) Explain Reproduction method in GA. **07**
- OR**
- Q.4** (a) Write a brief note on Kohonen's self-Organizing networks. **07**
- (b) Explain printed Character Recognition. **07**
- Q.5** (a) What is Defuzzification? Describe any two methods of Defuzzification. **07**
- (b) Elaborate Adaptive Neuro – Fuzzy Inference System with neat sketches. **07**
- OR**
- Q.5** (a) Explain ANFIS Architecture. **07**
- (b) Explain Hebbian Learning in detail. **07**
