Seat No.:	Enrolment No
-----------	--------------

## GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII (OLD) - EXAMINATION - SUMMER 2017

Subject Code: 173101 Date: 06/05/2017 **Subject Name: Soft Computing** 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) Define supervised and unsupervised learning. Differentiate between AI and ANN. 07 Why training algorithms required? Explain the Hebbian Learning Rule. **(b)** 07 What is Genetic algorithm? How it is different from traditional algorithm? 0.2 07 (a) Explain the error back propagation algorithm. 07 **(b) (b)** What is traveling salesperson problem? Explain cross-over operation for the 07 solution of the same problem using genetic algorithm. Explain counter propagation network. How counter propagation works in normal 07 0.3 (a) and training mode? Enlist and discuss reproduction methods in genetic algorithm. 07 **(b)** Q.3Discuss various operations of fuzzy sets with example. 07 (a) Write the differences between classical algorithm and genetic algorithm. Explain **(b) 07** different types of cross-over methods in genetic algorithm with example(s). 07 0.4 (a) Explain how Genetic algorithm used for weight determination in neural network. Explain the working of artificial neuron and explain how it differs from 07 **(b)** biological neuron. OR (a) What is defuzzification? Describe any two methods of defuzzification. 07 Explain rank selection method with example. **(b) 07** What are the factors which influence a system's ability to learn? 07 (a) Write a short note on rough set theory. **(b) 07** Write detailed note on 'GA based weight optimization'. **Q.5** (a) **07** 

\*\*\*\*\*

Discuss sequence prediction in machine learning.

**(b)** 

**07**