

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VII (OLD) EXAMINATION – SUMMER 2019**

**Subject Code: 173101**

**Date: 27/05/2019**

**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) Compare genetic neural network with ANN **07**  
(b) Give the differences between Supervised Learning and Unsupervised learning **07**
- Q.2** (a) Discuss various operations of fuzzy sets with example **07**  
(b) Explain Roulette-wheel Selection and Rank Selection with example. **07**
- OR**
- (b) Explain Mamdani fuzzy inference model in brief. **07**
- Q.3** (a) Discuss Back Propagation algorithm. **07**  
(b) Write a brief note on Kohonen's Self Organizing networks **07**
- OR**
- Q.3** (a) Write a short notes on: **07**  
i. Radial Basis Function  
ii. LVQ
- (b) How TSP can be solved using GA. Describe operation performed in different phases using suitable examples **07**
- Q.4** (a) Explain various defuzzification methods **07**  
(b) Explain various hybrid system **07**
- OR**
- Q.4** (a) Define rough set, upper approximation, and lower approximation. Explain with example. **07**  
(b) Draw a flowchart and explain an evolutionary algorithm **07**
- Q.5** (a) Discuss Adaptive Neuro-Fuzzy Inference Systems. **07**  
(b) Discuss Sequence Prediction in machine learning. **07**
- OR**
- Q.5** (a) Discuss color recipe prediction with soft computing in detail. **07**  
(b) Explain the Hebbian Learning Rule **07**

\*\*\*\*\*