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: <br> i. Radial Basis Function <br> ii. LVQ | **07** |
| | **(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** |

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