

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-VII • EXAMINATION – WINTER 2013**

**Subject Code: 173101****Date: 28-11-2013****Subject Name: Soft Computing****Time: 10:30 TO 01:00****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) What is Genetic algorithm? How it is different from traditional algorithm? **07**  
(b) Explain Learning Vector Quantization with example. **07**
- Q.2** (a) Explain following set-theoretic operation on fuzzy sets, **07**  
i) Containment ii) Union iii) Intersection iv) Complement  
v) Cartesian Product and Co-product  
(b) Explain Batch Learning in Hybrid Learning Rule. **07**  
OR  
(b) Explain Backpropagation Network. **07**
- Q.3** (a) Explain Coactive Neuro Fuzzy modeling. **07**  
(b) Explain Sugeno Fuzzy Model. **07**  
OR
- Q.3** (a) Define rough set. Explain approximation and reducts for rough set with example. **07**  
(b) Solve Travelling Salesman Problem using Genetic Algorithm with suitable example. **07**
- Q.4** (a) Describe Reproduction methods in GA. **07**  
(b) Explain soft computing characteristics. **07**  
OR
- Q.4** (a) Explain the working of artificial neuron and explain how it differs from biological neuron. **07**  
(b) Explain how Genetic algorithm used for weight determination in neural network. **07**
- Q.5** (a) Explain Fuzzy if-then rules. **07**  
(b) Explain Encoding in GA with example. **07**  
OR
- Q.5** (a) What is defuzzification? Describe different methods of defuzzification. **07**  
(b) Explain Printed Character Recognition. **07**

\*\*\*\*\*