

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**ME - SEMESTER IV (NEW) – EXAMINATION – SUMMER - 2017**

**Subject Code: 2740203****Date:03/05/2017****Subject Name: Soft Computing****Time:02:30PM-05:00PM****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) Can you explain what is happening in Soft computing? Explain Application of Soft computing in detail. **07**
- (b) What do you mean by Soft computing? Explain practical importance of Soft computing in detail with example. **07**
- Q.2** (a) Compare Reproduction and Crossover with the reference of Genetic Algorithm **07**
- (b) Explain Multi-level Optimization with example. **07**
- OR**
- (b) Discuss various operations of fuzzy sets with example. **07**
- Q.3** (a) What is defuzzification? Describe different methods of defuzzification. **07**
- (b) Compare Neuro-Fuzzy Hybrid Systems and Neuro-Genetic Hybrid Systems. **07**
- OR**
- Q.3** (a) How can you use Architecture of Back propagation (BP) Networks in Soft computing? Explain with example. **07**
- (b) What are the main ideas to evaluate of Single layer Perceptrons with example? **07**
- Q.4** (a) How can you implement Genetic Algorithm (GA) based Back propagation Networks. Explain in detail. **07**
- (b) Write a short note on GA based weight determination and Fitness function. **07**
- OR**
- Q.4** (a) Can you explain GA in Fuzzy Logic Controller? Also mention its Application with example. **07**
- (b) Draw a flowchart and explain Evolutionary Algorithms with Fuzzy components. **07**
- Q.5** (a) How to implement Neural Network Based Fuzzy Logic Inference with example? **07**
- (b) Explain Neuro Fuzzy Controller with example. **07**
- OR**
- Q.5** (a) With neat sketch explain Fuzzy Backpropagation (BP) architecture. **07**
- (b) Compare Fuzzy Neurons and Fuzzy Perceptrons. **07**

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