

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – III • EXAMINATION – WINTER 2012

Subject code: 730803**Date: 26/12/2012****Subject Name: Soft Computing Methods****Time: 10.30 am – 01.00 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) Explain following terms. **12**
 (i) Neural Network (ii) Fuzzy Logic
 (iii) Genetic Algorithm (iv) Neural Fuzzy System.
- (b) Define : MATLAB – as soft computing methods **04**
- Q.2** (a) What type of uncertainties with fuzzy systems? **07**
 (b) What is coding and fitness function of GA? **07**
- OR**
- (b) Explain following GA operation. **07**
 (i) Crossover (ii) Mutation
- Q.3** Attempt any Two **14**
 (a) Differentiate between plan based negotiations and human based negotiations.
 (b) Differentiate between Fuzzy Neural Network and Fuzzy Genetic Algorithm.
 (c) Explain Gauss elimination method with suitable example.
- Q.4** (a) Derive the back propagation training algorithm for the case where the **07**
 activation function is an arctan function.
 (b) Enlist and explain classification of learning rules. **07**
- OR**
- (a) Discuss mathematical modeling and application of neural network. **07**
 (b) Let the sets A,B,C and E be given as follows **07**
 E = All student enroll in the university cricket club.
 A = Male student, B = Bowlers, C = Batsmen.
 Draw individual Venn diagrams to illustrate
 (a) Female students (b) Bowlers who are not batsmen
- Q.5** Attempt any two **14**
 (a) Discuss different fuzzy operations.
 (b) Explain multilayer neural network.
 (c) References to MATLAB discuss 2D plot and 3D plot.
