

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER-IV • EXAMINATION – SUMMER • 2015

Subject Code: 640009**Date: 20-05-2015****Subject Name: Soft Computing****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)** Give a brief comparison between Biological neural network and Artificial neural network. **07**
- (b)** Define the following terms: **07**
1. Bias
 2. Weight
 3. Learning Rate
- Q.2 (a)** What are the various soft computing techniques? Discuss its application in details. **07**
- (b)** Explain the architecture and training of Perceptron networks **07**
- OR**
- (b)** Explain Boltzmann selection in detail. **07**
- Q.3 (a)** What are associative memories? Give a brief account of Auto associative memory. **07**
- (b)** Write a brief account on ART 1. **07**
- OR**
- Q.3 (a)** Write the steps involved in training algorithm of Kohonen self organizing features maps. **07**
- (b)** What are Back propagation networks? Explain its architecture and characteristics. **07**
- Q.4 (a)** Explain cross over operator and its types. **07**
- (b)** Explain mutation and mutation rate. **07**
- OR**
- Q.4 (a)** Describe a hybrid system that combines neural network and genetic algorithm **07**
- (b)** What are the applications of genetic algorithm? **07**
- Q.5 (a)** Explain the architecture of a fuzzy logic controller. **07**
- (b)** Write fuzzy logic control system models. **07**
- OR**
- Q.5 (a)** List the various applications of fuzzy logic controller. **07**
- (b)** Differentiate between fuzzy logic and crisp logic? How rules are defined in fuzzy rule base system **07**
