**M.TECH. DEGREE EXAMINATION**

**Branch: Computer Science and Engineering**

**Specialization: Computer Science and Engineering**

**Model Question Paper – I**

**First Semester**

 **MCSCS 101 COMPUTATIONAL INTELLIGENCE**

(Regular – 2013 admission)

**Time: 3 Hours Max Marks: 100**

***Answer the following Questions.***

1. a) Discuss in brief the logical frameworks for handling problems posed by uncertainty. (8)

 b) Explain defuzzification methods (8)

 c) Write notes on fuzzy decision making applications (9)

**or**

2 a) Write notes on fuzzy arithmetic operations. (7)

 b) Explain linguistic descriptions of fuzzy systems (8)

 c) Carry out fuzzy arithmetic operations for the linguistically defined terms

 x = very close to 3

 y = more or less equal to7

 using both the alpha-cut and the extension principle. (10)

3 a) Explain ANN and Artificial neuron (9)

 b) What is feed forward neural network (9)

 c) Differentiate supervised learning and unsupervised learning (7)

**or**

4 a) Explain back propagation neural network and calculation of weights of hidden-layer

 Neurons. (15)

 b) Derive the back propagation learning algorithm for a network with quasi polynomial synapses and product contacts. (10)

5. a) Explain procedures of genetic algorithms. (7)

 b) What are different genetic representations? (8)

 c) Explain different genetic crossovers (10)

 **or**

6. a) Explain about support vector machine learning (7)

 b) What are classifiers for support vector ? (10)

 c) Write notes on support vector regression. (8)

7. a) What is self organization in social insects? Explain with examples (9)

 b) What are different modes of communication in ants? (8)

 c) What are different of pheromone trail updating? (8)

 **or**

8. a) What is an expert system shell? (8)

 b) Explain probability based expert system (9)

 c) Write notes on expert system tools (8)