Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY M. E. - SEMESTER – III • EXAMINATION – SUMMER • 2014

Subject code: 730103 Date: 05-06-2014

Time: 02:30 pm - 05:00 pm Total Marks: 70

Instructions:

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

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Q.1	(a) (b)	Explain perceptron model of neural network with its limitations. What is fuzzification? Explain with suitable example how it can be done.	07 07
Q.2	(a)	What are LR type fuzzy numbers? Explain architecture of fuzzy neuron and fuzzy backpropagation network.	07
	(b)	Explain various architectures of neural network. OR	07
	(b)	Explain various learning methods of neural networks.	07
Q.3	(a)	Explain augmented back propagation network. What are its advantages?	07
	(b)	Explain Wangos multiple training encoding strategy. OR	07
Q.3	(a)	Explain following operations on fuzzy sets with suitable example. intersection, complement, product of two fuzzy sets, equality, power of fuzzy set, difference, disjunctive sum.	07
	(b)	What is defuzzification? Explain any two methods with suitable example.	07
Q.4	(a)	Write sequence of steps to solve any problem using GA. Give flowchart with suitable example.	07
	(b)	Compare various parent selection methods used in GA. OR	07
Q.4	(a)	Explain various types of cross-over operators with suitable example. What is the effect of cross over and mutation on exploration and exploitation?	07
	(b)	Explain multilevel and multimodal optimization.	07
Q.5	(a)	Explain the steps to train the fuzzy BP networks with suitable example.	07
	(b)	Explain graphical method to represent inference in FAM with suitable example. OR	07
Q.5	(a)	How genetic algorithm is used in design of fuzzy logic controller?	07
	(b)	What is fuzzy logic controller? Explain its framework.	07
