Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER-IV • EXAMINATION – WINTER • 2014

	•	t Code: 640009 Date: 06-12-2014	
Subject Name: Soft Computing Time: 10:30 am - 01:00 pm Instructions:		10:30 am - 01:00 pm Total Marks: 70	
		Attempt all questions.Make suitable assumptions wherever necessary.	
Q.1	(a)	Explain the following term related to ANN. (a) Weights (b) Bias (c) Threshold	07
	(b)	(a) Explain unsupervised learning.(b) Write the perceptron learning rule.	04 03
Q.2	(a)	What are the various techniques of soft computing & Discuss its applications of soft computing in detail.	07
	(b)	What are the limitations with error back-propagation algorithm? Define its characteristics and applications? OR	07
	(b)	Differentiate between biological neuron and artificial neuron on the basis of structure and function of a single neuron	07
Q.3	(a) (b)	What are the various types of crossover and mutation techniques? Explain the architectures of discrete BAM and Hopfield network. OR	07 07
Q.3	(a)	Define Artificial Neural Network with its characteristics and advantages. Describe any five applications of using the artificial neural networks. Explain the basic components of soft computing.	07
	(b)		
Q.4	(a) (b)	Write the general genetic algorithm Explain in detail about the various operators involved in genetic algorithm. OR	07 07
Q.4	(a) (b)	Explain the basic architecture of FLC and write steps involved in designing FLC. What is fuzzy rule based system? State various applications of fuzzy Systems.	07 07
Q.5	(a) (b)	Explain architecture of a fuzzy logic controller. List the various applications of fuzzy logic controller. OR	07 07
Q.5	(a)	Write the applications of genetic algorithm.	07
	(b)	Explain various selection methods for reproduction in genetic algorithm.	07
