Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER- IV• EXAMINATION - SUMMER 2017

Subject Name: Soft Computing Time: 10:30 am - 01:00 pm Instructions: 1. Attempt all questions. 2. Make suitable assumptions wherever necessary.			Date: 08-06-2017	
		rks: 70		
	3.	Figures to the right indicate full marks.		
Q.1	(a) (b)	Explain the basic components of soft computing. Explain various selection methods for reproduction in genetic algorithm.	07 07	
Q.2	(a)	What is fuzzy rule based system? State various applications of fuzzy Systems.	07	
	(b)	Define Artificial Neural Network with its characteristics and advantages. OR	07	
	(b)	What is fuzzy logic? Explain basic fuzzy set operations with example.	07	
Q.3	(a) (b)	Explain the architectures of discrete BAM and Hopfield network. Differentiate between biological neuron and artificial neuron on the basis of structure and function of a single neuron	07 07	
		OR		
Q.3	(a)(b)	What are the limitations with error back-propagation algorithm? Define its characteristics and applications? What are the various techniques of soft computing & Discuss its applications of soft computing in detail.	07 07	
Q.4	(a) (b)	Write the applications of genetic algorithm. What are the various types of crossover and mutation techniques?	07 07	
	(D)	OR	U1	
Q.4	(a) (b)	Explain in detail about the various operators involved in genetic algorithm. Write the general genetic algorithm	07 07	
Q.5	(a)	Explain the following term related to ANN. (a) Weights (b) Bias (c) Threshold	07	
	(b)	List the various applications of fuzzy logic controller. OR	07	
Q.5	(a) (b)	Explain architecture of a fuzzy logic controller. (a) Explain unsupervised learning.	07 07	
		(b) Write the perceptrop learning rule.		
