Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – WINTER 2013

Subject Code: 173101 **Date: 28-11-2013**

Subject Name: Soft Computing

Time: 10:30 TO 01:00 **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)**	What is Genetic algorithm? How it is different from traditional algorithm?	**07**
	(b)	Explain Learning Vector Quantization with example.	**07**
Q.2	**(a)**	Explain following set-theoretic operation on fuzzy sets, i) Containment ii) Union iii) Intersection iv) Complement v) Cartesian Product and Co-product	**07**
	(b)	Explain Batch Learning in Hybrid Learning Rule.	**07**
		OR	
	(b)	Explain Backpropagation Network.	**07**
Q.3	**(a)**	Explain Coactive Neuro Fuzzy modeling.	**07**
	(b)	Explain Sugeno Fuzzy Model.	**07**
		OR	
Q.3	**(a)**	Define rough set. Explain approximation and reducts for rough set with example.	**07**
	(b)	Solve Travelling Salesman Problem using Genetic Algorithm with suitable example.	**07**
Q.4	**(a)**	Describe Reproduction methods in GA.	**07**
	(b)	Explain soft computing characteristics.	**07**
		OR	
Q.4	**(a)**	Explain the working of artificial neuron and explain how it differs from biological neuron.	**07**
	(b)	Explain how Genetic algorithm used for weight determination in neural network.	**07**
Q.5	**(a)**	Explain Fuzzy if-then rules.	**07**
	(b)	Explain Encoding in GA with example.	**07**
		OR	
Q.5	**(a)**	What is defuzzification? Describe different methods of defuzzification.	**07**
	(b)	Explain Printed Character Recognition.	**07**

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