Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER– I (New course)• REMEDIAL EXAMINATION – SUMMER 2015

Subject Code: 2710312 **Date:14/05/2015**

Subject Name: INTELLIGENT SYSTEMS AND CONTROL

Time: 10:30 am to 1:00 pm **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)**	Discuss a single layer Perceptron with a Sigmoid Activation Function in detail.	**07**
	(b)	Do XOR Realization using suitable neural network with explanation.	**07**
Q.2	**(a)**	Discuss about delta training rule for feed forward neural network.	**07**
	(b)	Discuss about Training of the Kohonen Network in detail.	**07**
		OR	
	(b)	Give explanation on Hopfield Network in detail.	**07**
Q.3	**(a)**	Explain extensive principle for fuzzy set with necessary example.	**07**
	(b)	Give explanation on fuzzy relation with necessary example	**07**
		OR	
Q.3	**(a)**	Explain Deductive Inferences for fuzzy logic with example.	**07**
	(b)	Give explanation on approximate reasoning for fuzzy logic with example.	**07**
Q.4	**(a)**	Give explanation on an Adaptive (Tuner) Fuzzy Control System with necessary diagram.	**07**
	(b)	Explain Mamdani implication method of inference for fuzzy controller with necessary diagram.	**07**
		OR	
Q.4	**(a)**	Discuss about Takagi-Sugeno fuzzy plant model in detail.	**07**
	(b)	Discuss about stability of fuzzy control system in detail.	**07**
Q.5	**(a)**	Give explanation on Identification Algorithm for Oscillatory Step Responses.	**07**
	(b)	Discuss about Autotuning of PIDControllers in detail.	**07**
		OR	
Q.5	**(a)**	Explain On-line Identification of FOPDT Models in detail.	**07**
	(b)	Explain On-line Identification of SOPDT Models in detail.	**07**

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