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GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII (OLD) EXAMINATION – WINTER 2018

Subject Code: 173101   **Date: 29/11/2018**

Subject Name: Soft Computing

Time: 10:30 AM TO 01:00 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)**	What is unsupervised learning? Discuss Kohonen's self organizing networks in detail	**07**
	(b)	Explain the Hebbian Learning Rule	**07**
Q.2	**(a)**	Enlist and discuss different fuzzy set theoretic operations with example(s).	**07**
	(b)	What is meant by hybrid system and discuss its various types.	**07**
		OR	
	(b)	Explain Roulette-wheel Selection and Rank Selection with example.	**07**
Q.3	**(a)**	How TSP can be solved using GA. Describe operation performed in different phases using suitable examples.	**07**
	(b)	Compare genetic neural network with ANN	**07**
		OR	
Q.3	**(a)**	Explain different selection methods for GA	**07**
	(b)	Discuss Adaptive Neuro-Fuzzy Inference Systems	**07**
Q.4	**(a)**	Describe Inductive Concept Learning	**07**
	(b)	What do you mean by hybrid system? What is the need of such system(s), explain in brief. Also enlist and explain types of hybrid system.	**07**
		OR	
Q.4	**(a)**	Explain Neuro-Fuzzy Systems for Pattern Recognition	**07**
	(b)	Describe Rough Approximation	**07**
Q.5	**(a)**	Discuss Color recipe prediction as an application of computational intelligence in soft computing.	**07**
	(b)	Write detailed note on 'GA based weight optimization'	**07**
		OR	
Q.5	**(a)**	Explain Mamdani Fuzzy Models with suitable example	**07**
	(b)	Explain architecture of Adaptive Neuro-Fuzzy Inference Systems	**07**

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