Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER – II (New)– EXAMINATION – WINTER-2019

Subject Code: 3720217 **Date: 19-11-2019**

Subject Name: Soft Computing

Time: 02:30 PM TO 05:00 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)**	(i)Explain important of Soft computing? (ii)Explain Characteristic of Soft computing with appropriate example.	**07**
	(b)	(i)Compare Soft computing and Hard Computing. (ii) Explain various tools to solve soft computing problems.	**07**
Q.2	**(a)**	What are the different issues that have to be considered when designing a genetic algorithm for intelligent internet search? Explain the definition of crossover and selection of the degree of crossover issues.	**07**
	(b)	(i) How to express Fuzzy Operation? Explain applications of Fuzzy Operation with example. (ii) Can you Explain elements of Fuzzy system in details.	**07**
		OR	
	(b)	Explain practical importance of Machine Learning with example.	**07**
Q.3	**(a)**	(i)Why Neural Network is important? Explain the structure of Neuron. (ii) Compare Supervised and Unsupervised Learning.	**07**
	(b)	Explain practical importance of Adaptive Resonance Theory networks with example.	**07**
		OR	
Q.3	**(a)**	Explain following terms with example. i) Logic Inference ii) data structures iii) ANN	**07**
	(b)	Mention the role of fitness function in GA and what are the Parameters of GA?	**07**
Q.4	**(a)**	How to use Machine Learning Approach to Knowledge Acquisition? Explain with example.	**07**
	(b)	State the differences between traditional algorithm and genetic algorithm.	**07**
		OR	
Q.4	**(a)**	Write a short note on Learning methods in Neural Network.	**07**
	(b)	Explain the issues of Back Propagation network? How many type of operation performed on Back Propagation network? Explain suitable examples.	**07**
Q.5	**(a)**	Write a short note on Fuzzy Expert Systems and Fuzzy Decision Making.	**07**
	(b)	Differentiate neural network toolbox and fuzzy logic toolbox.	**07**
		OR	
Q.5	**(a)**	(i)How to express Arrays and array operations in Python? (ii)Explain practical importance Arrays in Python.	**07**
	(b)	How can you use neural networks and MATLAB in Soft Computing? Explain in details.	**07**

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