1100MRT307122302

Reg No.:____

Name:

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSIT

B.Tech Degree S5 (S,FE) Examination May 2025 (2019 Scheme)

Course Code: MRT307 Course Name: SOFT COMPUTING TECHNIQUES

Max. Marks: 100

Duration: 3 Hours

Pages. 7

		PART A			
		(Answer all questions; each question carries 3 marks)	IVIarks		
1		Illustrate the concept of extension principle with an example.	3		
2		What are the different terminologies used in fuzzy set?	3		
3		Explain about Mamdani fuzzy inference model?	3		
4		Define defuzzification? List out the different defuzzification methods?	3		
5		Discuss about supervised learning network?	3		
6		Explain the mutation techniques used in genetic algorithm?	3		
7		Write the learning algorithm for Learning Vector Quantization (LVQ)?	3		
8		Describe about Moody Darken's RBFN?	3		
9		Define Coactive Neuro Fuzzy Modelling?	3		
10		Illustrate the architectures of ANFIS?	3		
		PART B			
		(Answer one full question from each module, each question carries 14 marks)			
Module -1					
11	a)	Explain the fuzzy set theory with its features and operations?	8		
	b)	Describe about:	6		
		a) Trapezoidal Membership Function			
12	a)	Two fuzzy Relations are given by	10		
		0.6 0.5 0.7 0.3 0.4			
		$ \begin{array}{cccccccccccccccccccccccccccccccccccc$			
		Obtain the: a) Max- min Composition and b) Max-Product Composition			
	b)	Based on your own intuition find the membership value for Age of people?	4		
		Module -2			
13		Elaborate about Sugeno and Tsukamoto fuzzy model with suitable example.	14		
14		Describe about different derivative based optimization techniques?	14		

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Module -3

15	a)	Illustrate and explain the Back propagation perceptron concept.	7
	b)	Explain about Random search algorithm	7
16	a)	Discuss about the Adaptive linear neuron with algorithm?	7
	b)	Describe about downhill simplex search method.	7
		Module -4	
17		Elaborate about different types of unsupervised learning neural networks?	14
18		Write a note on Hebbian learning?	14
		Module -5	
19		Illustrate and explain the implementation of printer character recognition application.	14
20		Describe about hybrid learning algorithm?	14