BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: BTECH **SEMESTER : VII**
BRANCH: IT **SESSION : MO/2024**

SUBJECT: CS347 SOFT COMPUTING

TIME: 3 Hours **FULL MARKS: 50**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Before attempting the question paper, be sure that you have got the correct question paper.**
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

			CO	BL
Q.1(a)	Describe briefly different set theoretic operations.	[5]	1	1,2,4
Q.1(b)	Discuss different types of membership formulation and parameterization.	[5]	1,2	3,4,5
Q.2(a)	Describe the architectural details of Fuzzy Inference System.	[5]	2,3	3,4
Q.2(b)	Describe Mamdani, Sugeno, and Tsukamoto fuzzy model.	[5]	2,3	3,4
Q.3(a)	Explain the different steps of Genetic Algorithm with a flow diagram.	[5]	3,4	2,3
Q.3(b)	Suppose there is equality a + 2b + 3c + 4d = 30, find the value of a, b, c, and d using genetic algorithm that satisfy the above equation.	[5]	4,5	4,5
Q.4(a)	What is single layer and multiple layer Feed forward Neural Network? Describe the functioning of a single layer feed forward neural network.	[5]	3	2,3,4
Q.4(b)	Discuss the following learning strategies: (a) Hebbian Learning (b) Supervised Learning (c) Unsupervised Learning (d) Semi-Supervised Learning (e) Recurrent Learning	[5]	4	3,4
Q.5(a)	Illustrate the Perceptron and Adaline model.	[5]	3,4	2,3
Q.5(b)	Illustrate the Convolution Network and Radial Basis Function Network	[5]	3,4	3,4

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