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GIET UNIVERSITY, GUNUPUR – 765022

Ph.D. (Second Semester) Examinations, April – 2024

PPECS2016 – Soft computing

(CSE)

Time: 3 hrs

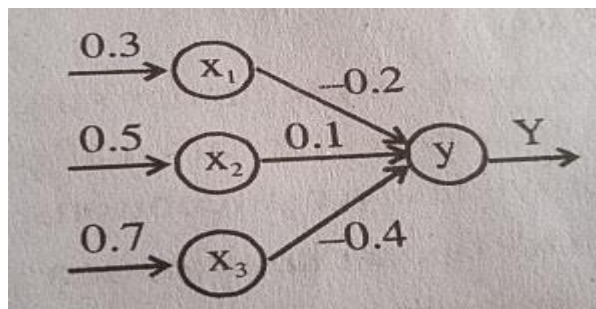
Maximum: 70 Marks

The figures in the right-hand margin indicate marks.

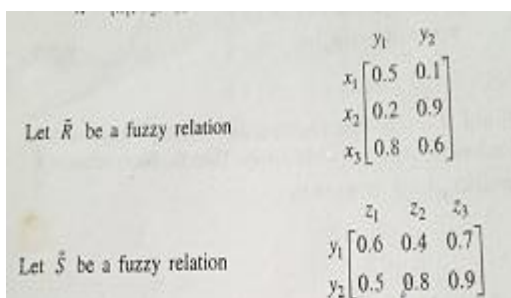
Answer ANY FIVE Questions

(14 x 5 = 70 Marks)

- | | Marks |
|---|-------|
| 1.a. Write different characteristics of soft computing. | 7 |
| b. Differentiate between soft computing and hard computing. | 7 |
| 2.a. Briefly describe different types of machine learning methods with example | 7 |
| b. What is the benefit of soft computing over traditional computing? | 7 |
| 3.a. Discuss different types of activation function used in ANN. | 8 |
| b. Compare ANN with BNN. | 6 |
| 4.a. Implement Ex-OR function by using RBF neural network. | 7 |
| b. Describe the KSOM neural network with example. | 7 |
| 5.a. For the following network, calculate output using binary step function as activation function. | 7 |



- b. 1. If $X = \{x_1, x_2, x_3\}$ $Y = \{y_1, y_2\}$ $Z = \{z_1, z_2, z_3\}$. Find max min composition of the following relation.



- 6.a. Two fuzzy proposition are given as 7
P: The temperature is high
Q: The velocity is low
With the fuzzy truth value $T(P) = 0.7$, $T(Q) = 0.6$
Find the truth value of the proposition
(i) The temperature is high and velocity is low
(ii) If the temperature is high then velocity is low.
- b. What do you mean by defuzzification? Discuss different method of defuzzification. 7
- 7.a. Define cross over in GA. Consider the following two parents selected for crossover. 7
Parents 1: [1 1 0 1 1 0 0 1 0 0 1 1 0 1 1 0]
Parents 2: [1 1 0 1 1 1 1 0 0 0 0 1 1 1 1 0]
Explain how to implement one point crossover, two point crossovers, and Uniform crossover
- b. Explain Roulette-wheel selection methods for selecting chromosomes. 7
- 8.a. Explain any one neural network toolbox. 7
- b. What is the difference between list and tuple in python? What is the different operation in Python? 7

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