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School of Computing Science and Engineering

Bachelor of Science in Computer Science

Mid Term Examination - Mar 2024

Duration : 90 Minutes

Max Marks : 50

Sem VI - E1UP604B - Soft Computing

General Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) State Demorgans law with an example. K2 (2)
- 2) What is the activation function in a neural network? K1 (3)
- 3) Given two input features and their weights, can you calculate the weighted sum and apply a step function to determine the output of a single-layer perceptron? K2 (4)
- 4) Explain the following terms : K2 (6)
 - (i) Fuzzy Arithmetic
 - (ii) Fuzzy to crisp conversion
 - (iii) Fuzzy relations
- 5) Compare Soft Computing vs. Hard Computing. K3 (6)
- 6) Elaborate the different types of neural networks? K3 (9)
- 7) Analyze the steps involved in designing a fuzzy logic controller? K4 (8)
- 8) Distinguish between Fuzzy Logic and Fuzzy Set. K4 (12)

OR

Analyze the potential applications where both single-layer perceptrons and fuzzy systems can be effectively employed. Compare and contrast the strengths and limitations of these two computational paradigms. K4 (12)