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EI/EX–8303

B. E. (Eighth Semester) EXAMINATION, June, 2009

(Common for EI & EX Engg. Branch)

FUZZY LOGIC AND NEURAL NETWORKS

(Elective – III)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt any *five* questions. All questions carry equal marks.

1. (a) Describe fuzzy sets and membership function. Develop a reasonable membership function for the fuzzy color set "red" based on the frequencies of the color spectrum.

   (b) What are the *two* classifications of CRISP Logic ? Explain.

2. (a) What do you understand by defuzzification ? Discuss some methods applied for dufuzzification.

   (b) Describe fuzzy control systems. Explain different control system design stages.

3. (a) Explain in brief the biological neuron.

   (b) What do you understand by Activation function ? State its various types.

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4. (a) Discuss linear separability with the help of an example.
   (b) State back propagation algorithm and discuss its significance.
5. (a) What are counter propagation networks ? How do they differ from full counter propagation networks ?
   (b) Explain in brief Kohonen layers. Discuss training the Kohonen layer with its applications.
6. (a) Discuss statistical methods used in neural networks.
   (b) Discuss associative memory with its applications. What do you understand by BAM ?
7. (a) Describe briefly about any *five* learning methods in Neural networks.
   (b) Explain Hopfield nets. Also discuss autocorrelators.
8. Write short notes on the following :
   (a) Perceptron and Threshold value
   (b) Cauchy training
   (c) Recurrent networks