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M.Tech I Semester Regular & Supplementary Examinations January/February 2019

FUZZY SYSTEMS & NEURAL NETWORKS

(Digital Systems & Computer Electronics)

(For students admitted in 2017 & 2018 only)

Time: 3 hours Max. Marks: 60

Answer all the questions

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1 Realize the XOR function using McCulloch-Pitts neuron.

OR

2 Explain the Widrow-Hoff rule for single output unit, several output units and extended rule.

3 Explain about Backpropagation algorithm.

OR

4 Consider a Kohonen network with two cluster units and three input units. The weight vectors for the cluster unit are (0.9, 0.7, 0.6) and (0.4, 0.3, 0.5). Find the winning cluster unit for the input vector (0.4, 0.2, 0.1). The learning rate is 0.2. Find the new weights for the winning unit.

5 Explain the architecture of Hetero associative memory neural network.

OR

6 Draw the architecture of a BAM network and explain the two types of BAM.

7 Explain the fuzzy rules, fuzzy inference methods, fuzzification and defuzzification.

OR

8 Explain the axioms of fuzzy intersection with examples.

9 Describe in detail about fuzzy Hebb FAMS.

OR

10 Explain about FAM system architecture.

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