JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH II - SEMESTER EXAMINATIONS, APRIL / MAY 2012
NEURAL NETWORKS AND FUZZY SYSTEMS
(CONTROL ENGINEERING)

Time: 3hours   Max. Marks: 60

Answer any five questions
All questions carry equal marks
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1.a)   Explain briefly the operation of a biological neural network.
  b)   What are the features inherited by artificial neural network from biological neural network?

2.a)   Describe McCulloch-Pitts model of a neuron and design NAND gate using this model.
  b)   Explain the different categories of learning.

3.a)   Derive the equation for weight change in the output layer and hidden layer for back propagation network.
  b)   Explain disadvantages of back propagation network.

4.a)   Give a brief description of the counter propagation networks.
  b)   How is the counter propagation network used for data compression?

5.   Explain bidirectional associate memory architecture and its training algorithm with suitable example.

6.a)   List and discuss properties of fuzzy relations.
  b)   Explain what is fuzzy inference?
  c)   Describe types of uncertainty.

7.a)   Explain the terms
        i)   Fuzzification ii)   Defuzzification
  b)   Briefly explain the measures of Dissonance.

8.a)   Explain how to use ANN method for the problem of load forecasting.
  b)   Explain the application of Fuzzy logic system to LF control.

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