Code No: D4901, D0708, D4304
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH II - SEMESTER EXAMINATIONS, APRIL/MAY-2012
NEURAL AND FUZZY SYSTEMS
(COMMON TO ELECTRICAL POWER ENGINEERING, ELECTRICAL POWER SYSTEMS, POWER ELECTRONICS)

Time: 3hours   Max. Marks: 60

Answer any five questions
All questions carry equal marks

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1.a)   Distinguish between biological and artificial neuron models and explain the characteristics of ANNs.
  b)   Explain the Mcculloch-Pitts model and potential applications of ANNs.

2.a)   Explain the different types of neuron activation function and ANNs architectures.
  b)   Distinguish between supervised and unsupervised learning strategy.

3.a)   Explain the perceptron convergence theorem and limitations of the perceptron model.
  b)   What is credit assignment problem and explain the back propagation algorithm.

4.a)   What are the general concepts of associative memory and explain BAM architecture?
  b)   Discuss storage and recall algorithm.

5.a)   What is vector quantization? Explain competitive learning.
  b)   Explain stability-plasticity dilemma and feed forward competition.

6.a)   What are the properties of classical sets and fuzzy sets? Explain different fuzzy relations.
  b)   What is uncertainty? How is it expressed using membership functions?

7.a)   What is Fuzzification? Explain rule base and decision making systems?
  b)   Discuss defuzzification.

8.a)   Explain ANN applications for fault diagnosis.
  b)   Briefly explain fuzzy logic control.

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