

R09

Code No: D2509

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M.Tech II- Semester Regular Examinations September, 2010

INTRODUCTION TO NEURAL NETWORKS

(SOFTWARE ENGINEERING)

Time: 3hours

Max. Marks: 60

**Answer any five questions
All questions carry equal marks**

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1. Explain the following learning process
 - a) Error correction learning
 - b) Memory based learning
 - c) Hebbian learning. [12]

- 2.a) Derive the relation between perceptron and Bayes classifier for a Gaussian Environment.
b) State and prove perceptron convergence theorem. [12]

- 3.a) Explain in detail Boltzman learning and competitive learning.
b) Derive and explain least mean square learning. [12]

- 4.a) Explain how XOR problem is solved using back propagation algorithm.
b) Explain the virtues and limitations of back propagation learning. [12]

- 5.a) Explain how back propagation network is used as differentiator.
b) Derive the equation for weight change in hidden layer of back propagation network. [12]

- 6.a) Write the algorithm and give the architecture of SOM.
b) Explain the properties of feature map. [12]

- 7.a) Derive the expression for energy of Hopfield network.
b) Explain about stability of equilibrium states. [12]

8. Write short notes on
 - a) Hierarchical vector quantizer
 - b) Adaptive pattern classification. [12]

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