

IV B.Tech II Semester Supplementary Examinations, April/May 2006
NEURAL NETWORKS AND APPLICATIONS
(Electrical & Electronic Engineering)

Time: 3 hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Distinguish learning equation and learning law.
(b) Briefly explain the purpose of logistic function. [8+8]
2. Explain in detail the differences between competitive learning and differential competitive learning. [16]
3. Write and discuss about Single layer Discrete Perceptron Training Algorithm. [16]
4. (a) Why convergence is not guaranteed for the back propagation learning algorithm?
(b) Discuss few tasks that can be performed by a back propagation network & significance of semi linear functions in back propagation. [6+10]
5. (a) Define recurrent network. Give some examples.
(b) Draw the flowchart of producing solution of optimization problems using feed-back networks. [16]
6. Mention some of the feature mapping capabilities of neural networks and explain any two of them in detail. [16]
7. Derive the back propagation learning rule for the first hidden layer in a three layer (2 hidden layer) feed forward network. Assume that the first hidden layer has k units with weights w_{ki} and differential activations $f_{h1}(\text{net } k)$, the second layer has j units with weights w_{jk} and differential activations $f_{h2}(\text{net } 1)$ and the output layer has L units with weights w_{lj} and differential activation $f_0(\text{net } 1)$. [16]
8. Explain template matching networks in neural processing. Draw a template bit map and the corresponding circuit diagram. [16]
