

**Code No: A0604**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**M.Tech I Semester Examinations, October/November-2011**

**NEURAL NETWORKS AND APPLICATIONS**

**(DIGITAL SYSTEMS AND COMPUTER ELECTRONICS)**

**Time: 3hours**

**Max. Marks: 60**

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

- - -

- 1.a) Explain the use of activation functions in neural networks. Describe the activation functions that can be used in neural networks.
- b) Differentiate between neural networks and artificial intelligence.
- c) A recurrent network has 3 source nodes, 2 hidden neurons, and 4 output neurons. Construct an architectural graph that describes such a network. [12]
2. In detail discuss about hebbian learning rule, perceptron learning rule. [12]
3. Explain training and classification using the discrete perceptron with the help of algorithm and relevant example. [12]
4. Draw the flow chart for Error back-propagation training and write the algorithm for Error back-propagation training. [12]
5. Write short notes on:
  - a) Summing network with digital outputs
  - b) Minimization of traveling salesman tour length. [12]
- 6.a) Draw and explain the linear associative network diagram.
- b) Explain the storage algorithm for the recurrent auto associative memory. [12]
- 7.a) Define BAM? Explain BAM operation using diagram.
- b) Describe how association encoding and decoding will be done in BAM. [12]
8. Draw the flow chart of the ART1 encoding algorithm for uni-polar binary inputs and explain each block in detail. [12]

\* \* \* \* \*