

CODE NO: NR421901 SET NO.4

2005 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

IV B.TECH. II SEMESTER SUPPLEMENTARY EXAMINATIONS

NEURAL NETWORKS

(ELECTRONICS & COMPUTER ENGINEERING)

JULY -2005

**TIME: 3 HOURS
MAX MARKS:80**

***Answer any FIVE Questions
All Questions carry equal marks***

1. What is meant by an activation function in an artificial neuron model. Describe the various activation functions that are employed and compare their merits and demerits.
2. Compare the similarities and differences between single layer and multi layer perceptrons and also discuss in what aspects multi layer perceptrons are advantageous over single layer perceptrons.
3. (a) How pattern mode and batch mode of training affect the result of backpropagation learning?
(b) What is the significance of momentum term in backpropagation learning?
(c) Briefly explain the refinements of the backpropagation learning and also the interpretation of the result of the learning.
4. What are the modes of operation of a Hopfield network? Explain the algorithm for storage of information in a Hopfield network. Similarly explain the recall algorithm.
5. Discuss how the "Winner-Take-All" in the Kohonen's layer is implemented and explain the architecture, Also explain the training algorithm.
6. Using suitable diagrams and equations explain the basic Bidirectional Associative Memory configuration. Also describe its energy function.
7. Explain the major phases involved in the ART classification process.
8. Describe how a neural network may be trained for a pattern recognition task. Illustrate with an example