

B. Tech Degree VII Semester Examination, November 2009

IT/CS/EC/EI/EB 705(C) ARTIFICIAL NEURAL NETWORKS (2002 Scheme)

Time : 3 Hours

Maximum Marks : 100

- I. (a) Explain the working of an artificial neuron. (5)
 (b) What are activation functions? Give an example. (5)
 (c) Explain the working of a multi-layer network with the help of a block diagram. (10)
- OR**
- II. (a) What do you mean by Linear Separability? Explain a problem that is not linearly separable. (10)
 (b) Explain :-
 (i) Hebbian learning rule
 (ii) Kohonen learning rule (10)
- III. (a) Explain the architecture of a Back Propagation Network and its working. (10)
 (b) Explain the problems involved in Back Propagation Training Algorithms. (10)
- OR**
- IV. (a) Explain what you mean by
 (i) Network paralysis (ii) Local minima
 (iii) Temporal Instability (12)
 (b) Show how ERROR is propagated back in a Back Propagation Network. (8)
- V. (a) Draw the block diagram of a Counter Propagation Network and explain its normal mode of operation. (10)
 (b) Explain how weights are initialized in a counter propagation network. (10)
- OR**
- VI. (a) Explain the training algorithm in a counter propagation network. (10)
 (b) Explain any one application of a counter propagation network. (10)
- VII. (a) Compare and contrast 'Boltzman Training' and 'Cauchy Training'. (10)
 (b) What is meant by
 (i) Simulated annealing
 (ii) Artificial specific heat method. (10)
- OR**
- VIII. (a) What do you mean by Statistical Methods? Explain an algorithm that uses statistical methods. (10)
 (b) Compare and contrast Back Propagation Training and Cauchy Training. (10)
- IX. (a) Draw the architecture of a hopfield network and explain its working. What are the requirements of its weight matrix? (10)
 (b) What are genetic algorithms? Explain the mutation and cross over operations. (10)
- OR**
- X. (a) Draw the architecture of a Bi-directional Associative Memory and explain its working. (10)
 (b) Show how associations are stored and retrieved in a Bi-directional Associative Memory. (10)

