

B. Tech Degree VII Semester (Supplementary) Examination **June 2006**

EB/EC/CS 705 (C) ARTIFICIAL NEURAL NETWORKS *(Prior to 2002 Admissions)*

Time : 3 Hours

Maximum Marks : 100

- I. (a) Design a MLP network to solve the two input XOR problem. (12)
(b) Differentiate between supervised and un-supervised learning algorithms with examples. (8)
- OR**
- II. (a) What is delta learning rule? List the limitations. (8)
(b) Write down the expression for sigmoidal and Gaussian activation functions and draw them. How activation functions are classified? (12)
- III. (a) Differentiate between learning by epoch and learning by pattern. (8)
(b) Explain the BP algorithm with momentum and smoothing? How it improves the performance of standard BP algorithm? (12)
- OR**
- IV. (a) What do you mean by over learning? How the problem is eliminated? (8)
(b) How the local minima problem is dealt in BP training. Mention two stopping criteria in BP algorithm. (12)
- V. (a) How training is applied to Kohonen layer? Explain with relevant equations. (10)
(b) Explain one typical application of counter propagation neural networks. (10)
- OR**
- VI. (a) What is preprocessing of input vectors? Why it is required? How initial weights are decided in a network? How these factors will affect the network performance? (12)
(b) Explain the structure of a feed forward counter propagation network. (8)
- VII. (a) What is simulated annealing? Explain how the concept is applied in network training? (10)
(b) Explain how neural network is applied in optimization problems. (10)
- OR**
- VIII. (a) Compare the features of BP and Cauchy's training algorithms. (10)
(b) Write down the Boltzman training algorithm and explain the steps. (10)
- IX. (a) How discrete Hopfield network stores binary patterns? Explain the capacity limitations. (10)
(b) Explain mutation and crossover operations in GA with examples. (10)
- OR**
- X. (a) How the data retrieval operation is performed in BAM? (10)
(b) Explain the structure of AET-I type networks. (10)

