

B. Tech Degree VII Semester (Supplementary) Examination July 2010

EB/CS/IT 705 (C) ARTIFICIAL NEURAL NETWORKS

(2006 Scheme)

Time : 3 Hours Maximum Marks : 100

PART A

Answer ***ALL*** questions (8 x 5 =40)

I. (a) What are the biological aspects that lead to the development of Artificial Neural Networks?
(b) Show how a single MC-Culloch Pitts neuron is used to implement a 2 input NOR gate.
(c) Explain the important characteristics of Hopfield nets.
(d) Describe a full Counter Propagation Network with a neat sketch.
(e) Write a note on Learning Vector Quantization.
(f) Explain Max net and its features (any two)
(g) Give examples of Probabilistic Neural Networks and its usage (any two).
(h) Comment on support vector machine classifiers.

PART B

(4 x 15 = 60)

II. a. What is a perceptron? Explain. (5)
b. Define and plot the identity function, binary step function, binary sigmoidal function and bi-polar sigmoidal function, used in neural networks. (10)

OR

III. With suitable examples explain Delta and Hebbian learning rules. (15)

IV. Explain the training of BP network and also give its derivation. (15)

OR

V. a. Explain in detail about CPN architecture and Discrete Hopfield nets. (10)
b. Compare counter propagation and feed forward type neural networks. (5)

VI. a. Discuss the problems involved when weights are assigned randomly in the Kohonen SOM. (7)
b. Explain how learning is carried out in ART. (8)

OR

VII. Write short notes on

(i) Kohonen SOM.
(ii) Hetero Associative nets
(iii) Hamming net. (6+5 +4=15)

VIII. a. Explain, how support vector machine classifiers can be used to classify two sets of data points? (10)
b. Explain Boltzmann machine. (5)

OR

IX. a. Write an elaborate note on Neuro Fuzzy Hybrids. (8)
b. Explain any two Fuzzy Neural systems. (7)

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