B. Tech Degree VII Semester Examination, November 2009

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

(2006 Scheme)

Time : 3 Hours Maximum Marks : 100

PART A

(Answer ***ALL*** questions)

(All questions carry ***EQUAL*** marks)

(8 x 5 = 40)

I. (a) Explain the biological model of a neuron with a neat sketch.
(b) What is Mc.Culloch Pitts neuron? How it is used to implement XOR function?
(c) Explain a Hopfield net and its characteristics.
(d) Briefly explain full counter propagation network and its application.
(e) Explain Learning Vector Quantization method.
(f) Describe Associative Memory Networks.
(g) What is Simulated Annealing? Explain its relevance to neural network training.
(h) Comment on the usage of neural networks in Image Processing and Classification.

PART B

(4 x 15 = 60)

II. Discuss perceptron training algorithm with a suitable example. What are its limitations? Explain. (15)

OR

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

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

OR

V. (a) Describe CPN Architecture and Discrete Hopfield nets. (10)
(b) Briefly explain content Addressable Memory. (5)

VI. (a) With a neat diagram explain the different stages in the operation of an ART. (8)
(b) Briefly explain ART training method. (7)

OR

VII. Write brief notes on :

(i) Kohonen SOM
(ii) Max net
(iii) BAM (3 x 5 = 15)

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

OR

IX. Discuss the following neurofuzzy systems.

(i) Fuzzy neural hybrids
(ii) Neuro fuzzy Hybrids (7 + 8 = 15)

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