



Time 2.5 Hours

Maximum Marks : 100

B. Tech Degree VII Semester Examination November 2006

IT 701 NEURO COMPUTING

(Prior to 2002 Admissions)

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|-----------|-----|--|------|
| I. | (a) | Explain the structure of a biological neuron. Also explain the structure of artificial neuron. | (10) |
| | (b) | Explain supervised learning and unsupervised learning. | (10) |
| OR | | | |
| II. | (a) | Explain how fault tolerance, parallel and distributed processing can be achieved in neural networks. | (10) |
| | (b) | Discuss how a perceptron can classify the inputs by linear separability with suitable example. | (10) |
| III. | (a) | Explain learning algorithms. | |
| | | (i) Hebbian learning (ii) Widrow – Hoff learning | (10) |
| | (b) | Why do you add a neuron bias and momentum in the multilayer perceptron? | (10) |
| OR | | | |
| IV. | (a) | Explain back propagation algorithm for multilayer perceptron. | (10) |
| | (b) | Draw a multi layer perceptron for solving X-OR problem. | (10) |
| V. | | Explain the architecture of ART with suitable diagram for comparison, recognition, lateral inhibition-recognition processes. | (20) |
| OR | | | |
| VI. | (a) | Explain ART classification process. | (10) |
| | (b) | Explain the characteristics of ART. | (10) |
| VII. | (a) | Explain the configuration of a single layer recurrent network. | (10) |
| | (b) | Discuss the stability of the recurrent network. | (10) |
| OR | | | |
| VIII. | (a) | Explain the TSP solution using Hopfield networks. | (10) |
| | (b) | Explain BAM architecture. | (10) |
| IX. | (a) | Explain the training in Kohonen's network. | (10) |
| | (b) | Why and how preprocessing of input vectors are done in Kohonen's network? | (10) |
| OR | | | |
| X. | | Explain the cognitron and neo cognitron model. | (20) |