Exam Neural Networks (Theory Part)
May 27, 2004

Please do not use any notes, books, slides, etc.

1. **Perceptron/Adaline**
   - (10 points) Describe the differences between Perceptron and Adaline.
   - (5 points) Why the perceptron cannot be applied to non-linearly separable classes?
2. **Feed-Forward Neural Networks (FFNNs)**
   - (20 points) Describe the architecture, neuron model and learning algorithm of FFNNs.
   - (10 points) Give an example of a learning problem that can be solved by a FFNN but not by a perceptron.
3. **Radial Basis Function Networks/Support Vector Machines**
   - (15 points) Describe architecture, neuron model and learning algorithm of RBF networks.
   - (10 points) Describe the differences between RBF and SVM.
4. **Self Organizing Maps/Competitive learning**
   - (15 points) Describe the SOM algorithm.
5. **Hopfield Networks**
   - (15 points) Describe the architecture of Hopfield networks and how the weights are computed.