

Code :R5320505

R5

III B.Tech II Semester(R05) Supplementary Examinations, April/May 2011
NEURAL NETWORKS

(Computer Science & Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. Explain the following benefits of neural network
 - (a) Neurobiological analogy
 - (b) Uniformity of analysis and design
 - (c) Fault tolerance
 - (d) VLSI implementability.
2.
 - (a) Write about correlation matrix memory.
 - (b) Write about learning rate parameter.
3.
 - (a) Write about Bayes classifier for Gaussian distribution
 - (b) What is the relation between perceptron Bayes classification explain.
4. Explain signal flow graphical summary of back propagation learning showing forward pass and backward pass.
5.
 - (a) Draw the architecture in which there is a hidden layer with 3 hidden units and the network is fully connected.
 - (b) Explain Jacobian matrix of the multilayer perceptron.
 - (c) Explain how the Hessian matrix plays an important role in Neural Networks.
6.
 - (a) What are the applications of self organizing map in image processing and pattern recognition.
 - (b) It is sometimes said that "the SOM algorithm preserves the topological relationships that exists in the input space". Strictly speaking, this property can be guaranteed only for an input space of equal or lower dimensionality than that of the neural lattice. Discuss the validity of this statement.
7.
 - (a) Discuss about stability and convergence in the context of an autonomous nonlinear dynamical system with equilibrium state.
 - (b) Draw and explain block diagram of related model.
8.
 - (a) What is the hopfield network? Explain
 - (b) With help of suitable diagram, discuss the dynamics of the Hopfield network.
 - (c) What are the limitations of Hopfield network.
