

Introduction to Soft Computing

Practice Sheet: NN-1

Introduction to ANN

- 1) An ANN learn quickly if η , the learning rate assumes the following value(s).
 - (a) $\eta = 1$
 - (b) $\eta < 1$
 - (c) $\eta > 1$
 - (d) $\eta = 0$

- 2) Which of the following is true for neural networks?
 - i. The training time depends on the size of the network.
 - ii. Neural networks can be simulated on a conventional computer.
 - iii. Artificial neurons are identical in operation to biological ones.
 - (a) i and ii are true
 - (b) i and iii are true
 - (c) ii is true.
 - (d) all of them are true

- 3) Which of the following is true for neural networks?
 - i. The error calculation which is followed in “Back-propagation algorithm” is the steepest descent method.
 - ii. Simulated annealing approach is followed in unsupervised learning.
 - iii. A problem whose output is linearly separable can also be solved with MLFFNN.
 - iv. The output of the perceptron with hard limit transfer function is more accurate than it is defined with any sigmoid transfer function.
 - (a) i and iii are true
 - (b) i and ii are true
 - (c) ii and iv are true
 - (d) all are true

- 4) A possible neuron specification to solve the AND problem requires a minimum of
 - (a) Single neuron
 - (b) Two neurons
 - (c) Three neurons
 - (d) Four neurons

- 5) What is back propagation?
 - (a) It is another name given to the curvy function in the perceptron
 - (b) It is the transmission of error back through the network to adjust the inputs
 - (c) It is the transmission of error back through the network to allow weights to be adjusted so that the network can learn
 - (d) None of the above

- 6) Neural Networks are complex _____ with many parameters
- (a) Linear Functions
 - (b) Nonlinear Functions
 - (c) Discrete Functions
 - (d) Exponential Functions
- 7) For problems, with error calculation, we solve using
- (a) Recurrent neural networks
 - (b) Single layer feed forward neural network
 - (c) Multilayer feed forward neural network
 - (d) All of the above
- 8) Application of Neural Network includes
- (a) Pattern Recognition
 - (b) Classification
 - (c) Clustering
 - (d) All of the above
- 9) If an individual x_i is dominated by p_i individuals in the current generation, then $rank(x_i)$ is
- (a) 0
 - (b) p_i
 - (c) 1
 - (d) $1 + p_i$
- 10) What is perceptron in Neural network
- (a) It is an auto-associative neural network
 - (b) It is a double layer auto-associative neural network
 - (c) It is a single layer feed-forward neural network with pre-processing
 - (d) It is a neural network that contains feedback