

## Artificial Neural Network Question Bank

### UNIT:I

1. Explain in details development in Artificial neural network
2. Explain how the ANN resembles the brain
3. Draw and explain biological neuron
4. Compare biological Neural network with Artificial Neural network
5. What is the significance of weight used in ANN
6. List the various type of activation function used in ANN .Explai any one in details
7. What are the different learning rules in ANN .Explain any one in details
8. What are the building block of ANN
9. Explain the architecture of ANN
10. How net input used in Matrix multiplication method
11. Write a Note on Threshold .
12. How does the threshold help to obtain the output.
13. What are the characteristics of ANN

### UNIT:II

1. Discuss the main requirement of Mcculloch pitch model
2. Discuss the excitatory and inhibitory input in of Mcculloch pitch model
3. Explain the Mcculloch pitch model architecture.
4. Discuss the winner take all process excited by competitive learning
5. Explain hebb net with its architecture
6. Explain algorithm for hebb net.
7. Explain how the hebb net use for pattern recognition problem
8. Explain Hebb learning rule
9. Explain perceptron learning rule
10. Explain Delta learning Rule.Why delta learning rule called error correcting rule
11. Explain Boltzman Learning rule
12. Explain the memory based learning rule
13. Explain the concept of linear separability.

### UNIT:III

1. Draw and explain the architecture of single layer perceptron
2. Explain the single layer perceptron algorithm for one output class
3. Draw and Explain the ADALINE architecture and algorithm
4. Explain MADALINE architecture and algorithm

5. Explain MRI algorithm
6. Explain MRII algorithm
7. Numerical Based on Perceptron network

#### UNIT:IV

1. What do you mean by pattern association? Write the Hebb rule for pattern association
2. What do you mean by pattern association? Write the Delta rule for pattern association
3. What is hetro associative memory Draw and explain the architecture of hetro associative memory
4. A hetro associative net is trained by Hebb outer product rule for input row vector  $S = (x_1, x_2, x_3, x_4)$  to output row vectors  $t=(t_1, t_2)$ . Find the weight matrix.
 
$$S_1 = (1 \ 1 \ 0 \ 0) \ t_1 (1 \ 0)$$

$$S_2 = (1 \ 1 \ 1 \ 0) \ t_2 (0 \ 1)$$

$$S_3 = (0 \ 0 \ 1 \ 1) \ t_3 (1 \ 0)$$

$$S_4 = (0 \ 1 \ 0 \ 0) \ t_4 (1 \ 0)$$
5. A hetro associative net is trained by Hebb outer product rule for input row vector  $S = (x_1, x_2, x_3, x_4)$  to output row vectors  $t=(t_1, t_2)$ . Find the weight matrix and test the network with input training vectors.
 
$$S_1 = (1 \ 1 \ 0 \ 0) \ t_1 (1 \ 0)$$

$$S_2 = (0 \ 1 \ 0 \ 0) \ t_2 (1 \ 0)$$

$$S_3 = (0 \ 0 \ 1 \ 1) \ t_3 (0 \ 1)$$

$$S_4 = (0 \ 0 \ 1 \ 0) \ t_4 (0 \ 1)$$
6. What is auto associative memory network? Draw and explain the architecture of auto associative memory network
7. What is Bi-directional associate memory? Draw and explain the architecture of Bidirectional associate memory.
8. What is Discrete Hopfield Net ? Draw and explain the architecture of Discrete Hopfield Net

