Unit-4 Question Bank

Sl. No.	Question	Marks
1.	Write SVM algorithm and explain with an example.	7
2.	Discuss various methods of modifying the weights between neurons.	6
3.	Summarize McCulloch Pitts neuron model. Generate OR function using the same.	6
4.	What is perceptron learning rule?	4
5.	Illustrate Hebbian learning rule for neural network environment. Realize Hebb net for AND function with bipolar inputs and targets.	8
6.	What are activation functions? Describe with diagrams different types of linear and non-linear activation functions.	8
7.	Write and analyze the training algorithm for perceptron networks.	6
8.	Develop a perceptron for AND function with bipolar inputs and target (alpha=1, theta=0).	6
9.	Describe the building blocks of a Biological neuron with a neat diagram.	6
10.	Differentiate between brain and computer.	6
11.	Compare ANN and BNN.	8
12.	Describe the building blocks of ANN's.	6
13.	What are activation functions? Describe various linear and non-linear activation functions.	6
14.	Differentiate between bias and threshold. If the net input to an output neuron is 0.86 calculate its output when the activation function is (i) Binary sigmoidal (ii) Bipolar sigmoidal	8
15.	Realize XOR function using McCulloch Pitts neuron.	8
16.	Write algorithm for Hebb Net. Apply the same to the XOR function with bipolar input targets. Justify the separating line.	6
17.	Compare weights and bias on ANN's.	5
18.	Artificial Neural Networks is an information-processing paradigm that is inspired by the way biological nervous system, such as brain, process information. Elaborate the significance of weights in artificial neural networks and three different types of training methods. Give example.	7
19.	Using the perceptron learning rule, find the weights required to perform the following classification: vectors(1,1,1,1) and (-1,1,-1,-1) are members of class (with target value 1); vectors(1,1,1,-1) and (1,-1,-1,1) are not members of class (with target value -1). Use learning rate of 1 and starting weights of 0. Using each of the training and vectors as input, test the respose of the net.	8
20.	Aply the Hebbnet to the AND fuction and XOR function with bipolar input and targets. Justify the separating line can/cannot be drawn.	8

21.	Using the perceptron learning rule, find the weights required to perform the following classifications vectors (1 -1 1 -1), (-1 1 -1 -1) are members of class (having target value 1) vectors (1 1 -1 -1) and (1 -1 -1 1) are not members of class (having target value -1) use learning rate of 1 and starting weights of 0. Use each of the training and vectors as input, test the response of the net.	8
22.	How is boundary region (decision boundary) determined using linear separability concept? Describe with mathematical equations.	5
23.	Explain Single layer perceptron with a neat diagram.	5
24.	Describe Multilayer perceptron and its architecture.	5
25.	Distinguish between Single and multi-layer perceptron.	6
26.	List and explain the various learning algorithms or learning rules.	5
27.	Explain the process of back propagation with a neat diagram.	6
28.	Explain the desirable characteristics of ANN.	5
29.	Differentiate between Von Neumann computer and BNN.	5
30.	Mention the advantages of ANN.	4
31.	Discuss the basic building blocks of ANN.	6
32.	Explain the ANN terminologies.	6
33.	Explain Hebb net architecture and algorithm.	7
34.	What do you mean by linear separability? Write its equation.	4
35.	Explain the two types of perceptron.	5

NOTE: In addition, all the problems of McCulloch Pitts Neuron, Hebb Net and Perceptron available in the Textbook.