## 2.10 Review Questions

1. Define an artificial neural network.
2. State the properties of the processing element of an artificial neural network.
3. How many signals can be sent by a neuron at a particular time instant?
4. Draw a simple artificial neuron and discuss the calculation of net input.
5. What is the influence of a linear equation over the net input calculation?
6. List the main components of the biological neuron.
7. Compare and contrast biological neuron and artificial neuron.
8. State the characteristics of an artificial neural network.
9. Discuss in detail the historical development of artificial neural networks.
10. What are the basic models of an artificial neural network?
11. Define net architecture and give its classifications.
12. Define learning.
13. Differentiate between supervised and unsupervised learning.
14. How is the critic information used in the learning process?
15. What is the necessity of activation function?
16. List the commonly used activation functions.
17. What is the impact of weight in an artificial neural network?
18. What is the other name for weight?
19. Define bias and threshold.
20. What is a learning rate parameter?
21. How does a momentum factor make faster convergence of a network?
22. State the role of vigilance parameter in ART network.
23. Why is the McCulloch–Pitts neuron widely used in logic functions?
24. Indicate the difference between excitatory and inhibitory weighted interconnections.
25. Define linear separability.
26. Justify – XOR function is non-linearly separable by a single decision boundary line.
27. How can the equation of a straight line be formed using linear separability?
28. In what ways is bipolar representation better than binary representation?
29. State the training algorithm used for the Hebb network.
30. Compare feed-forward and feedback network.

## 2.11 Exercise