Module 3- Artificial Neural Networks

Artificial Neural Networks (Chapter 4)

1. What is Artificial Neural Network?

2. What are the types of problems in which Artificial Neural Network can be applied.

3. Write a note on Representational Power of Perceptron

4. What is linearly in separable problem? Design a two-layer network of perceptron to implement
   a) X OR Y   b) X AND Y

5. Explain the concept of a Perceptron with a neat diagram.

6. Discuss the Perceptron training rule.

7. Define Delta Rule.

8. Under what conditions the perceptron rule fails and it becomes necessary to apply the delta rule

9. What do you mean by Gradient Descent?

10. Derive the Gradient Descent Rule.

11. What are the conditions in which Gradient Descent is applied.

12. What are the difficulties in applying Gradient Descent.

13. Explain the importance of Stochastic Gradient Descent

14. Differentiate between Gradient Descent and Stochastic Gradient Descent

15. Differentiate between Gradient Descent and Perceptron training rule.

16. Derive the Backpropagation rule considering the training rule for Output Unit weights and
    Training Rule for Hidden Unit weights

17. Write the algorithm for Back propagation.

18. Explain how to learn Multilayer Networks using Backpropagation Algorithm.

19. What is Squashing Function?

20. Briefly explain the following with respect to Backpropagation

    a) Convergence and Local Minima of MLP

    b) Representational Power of Feedforward Networks

    c) Generalization, Overfitting, and Stopping Criterion