Exam. Code : 208604
Subject Code : 4694

M.Sc. (Information Technology) Semester—IV

MIT–403 : ARTIFICIAL NEURAL NETWORKS

Time Allowed—3 Hours] [Maximum Marks—100

Note :— Attempt any **FIVE** questions.

1. (a) What is Artificial Neural Network ? Explain the basic model of an artificial neuron. 10

   (b) Explain the various possible architectures for a neural network. 10

2. (a) Discuss the classification of neural network learning rules in detail. 12

   (b) Explain the LMS algorithm. 8

3. Explain the Rosenblatt's Perceptron model in detail and also discuss why this model cannot handle tasks which are not linearly separable. 20

4. (a) Explain pocket learning algorithm without ratches. 10

   (b) Discuss linear machines learning algorithm. 10

5. Explain Hopfield model and its applications in detail. 20

6. What is Stability-Plasticity Dilemma ? Explain the architectures of ART1 and ART2 networks. 20

7. Explain back-propagation learning in detail and also write the algorithm for back-propagation learning. 20

8. (a) Compare the performance of Artificial neural network and biological neural network in terms of speed of processing, size and complexity, storage, fault tolerance. 10

   (b) Write various applications of back-propagation learning. 10