F 3248

Reg. No....................................

Name....................................

B.TECH. DEGREE EXAMINATION, NOVEMBER 2014

Eighth Semester

Branch : Applied Electronics and Instrumentation Engineering

AI 010 804 L01—NEURAL NETWORKS—Elective III (AI)

(New Scheme—2010 Admissions—Supplementary)
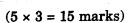
Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.
Each question carries 3 marks.

1. Distinguish between Supervised and Unsupervised Learning.

2. What is pattern recognition ?

3. What is an associative memory ?

4. What are the three basic competitive learning laws ?

5. What is the basis for Boltzmann learning law ?

(5 × 3 = 15 marks)

Part B

Answer all questions.
Each question carries 5 marks.

6. Draw the model of MP (McCulloch Pitts) neuron and state its characteristics.

7. Discuss the method of steepest descent.

8. Write a note on vector quantization.

9. Explain the features of Kohonen's self organizing learning algorithm.

10. Distinguish between clamped and free running conditions in a Boltzmann machine.

(5 × 5 = 25 marks)

Part C

Answer all questions.
Each full question carries 12 marks.

11. Compare ADALINE and MADALINE networks. How can we solve XOR problem using MADALINE ?

Or

Turn over

12. (a) Discuss the applications of artificial neural network.   (6 marks)

    (b) Give an overview of different learning methods.   (6 marks)

13. Give the architecture of a multi-layer perceptron. Explain the features and limitations of its learning.

Or

14. Give the back propagation algorithm and comment on its performance.

15. Explain how Hopfield network algorithm can be used to store and recall a set of bipolar patterns.

Or

16. Write a note on :

    (i) Adaptive resonance theory.   (6 marks)

    (ii) ART networks.   (6 marks)

17. Briefly explain the working of a counter propagation network.

Or

18. (a) What is the main difference between an instar network with competitive learning ?

                                                       (6 marks)

    (b) Explain how a competitive learning network with linear units performs a short term memory task.

                                                       (6 marks)

19. Explain the architecture of a Boltzmann machine. Briefly explain the tasks that can be accomplished using such a machine.

Or

20. Briefly explain the concept of simulated annealing. What is annealing schedule ?

                                                      [5 × 12 = 60 marks]