

**M.E. DEGREE EXAMINATIONS: NOVEMBER 2009**

Third Semester

**APPLIED ELECTRONICS**

P07AEE02 Neural Networks & Applications

**Time: Three Hours**

**Maximum Marks: 100**

**Answer ALL Questions:-**

**PART A (10 x 2 = 20 Marks)**

1. Draw the structure of biological neuron.
2. What are the steps in LMS learning algorithm.
3. State Micchelli's theorem.
4. Compare Regularization RBF and Generalized RBF
5. Compare static committee machine and dynamic committee machine.
6. Define hyperbolic attractor.
7. Define CAM.
8. Write down the applications of adaptive resonance theory.
9. Define the working principle of competitive learning.
10. What is mean by Voronoi tessellation?

**PART B (5 x 16 = 80 Marks)**

11. (a) State and explain Perceptron Convergence theorem.

**(OR)**

- (b) Explain the following learning tasks

(i) Pattern Recognition (8)

(ii) Pattern association (8)

- 12.(a) What are the various learning strategies of RBF network? Explain any two of them.

**(OR)**

- (b) Explain the application of support vector machine for Nonlinear Regression.

13.(a) Draw the structures of ME and HME models and explain their operation.

**(OR)**

(b) What are the various characteristics of Neurodynamical Model? Draw its various models and explain in detail.

14.(a) Explain Boltzmann machine in detail.

**(OR)**

(b) Explain Bidirectional associative memory in detail.

15.(a) Explain Mexican Hat Neural Network in detail.

**(OR)**

(b) Explain spiking neuron model.

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