

**ARTIFICIAL NEURAL NETWORKS**

**UNIT – I**

Basics Of Artificial Neural Networks : Characteristics of Neural Networks – Historical development of Neural Network principles – Artificial Neural Networks: Terminology – Models of Neuron – Topology – Basic Learning Laws.

**UNIT – II**

Activation And Synaptic Dynamics : Introduction – Activation Dynamic Models – Synaptic Dynamic Model – Learning Models – Learning Methods.

**UNIT – III**

Functional Units Of Ann For Pattern Recognition Tasks: Pattern Recognition Problem – Basic Functional Units – Pattern Recognition Tasks by The Functional Units – FEED FORWARD NEURAL NETWORKS: Introduction – Analysis of Pattern Association Networks – Analysis of Pattern Classification Networks – Analysis of Pattern Mapping Networks.

**UNIT – IV**

Feedback Neural Networks: Introduction – Analysis of Linear Auto Associative FF Networks – Analysis of Pattern Storage Networks.

Computer Learning Neural Networks: Introduction – Components of a Competitive Learning Network – Analysis of Feed Back Layer for Different Output Functions – Analysis of Pattern Clustering Networks – Analysis of Feed Mapping Network.

**UNIT – V**

Applications Of Neural Systems : Applications of Neural Algorithms And Systems Character Recognition – Expert System Applications – Neural Network Control Applications, Spatio – Temporal Pattern Recognition – Neocognition and other Applications.

**Text Books:**

- 1.For Units I to IV : “ARTIFICIAL NEURAL NETWORKS”, B.YEGNANARAYANAN, Eastern Economy Edition – Chapter 1,2. (2,1,2.2,2.3,2.4 only), 3,4,5 (5,5.1,5.2,5.3 only) & 6.
- 2.For Units – V : “INTRODUCTION TO ARTIFICIAL NEURAL SYSTEMS”. JACEK M.ZURADA – Jaico Publishing House ( 1994).

**Reference Book:**

“Introduction to the theory of Neural Computation”, - J. Hertz.A.Krogh ., and R.G.Palmer, Addison – Wesley 1991.