

PAPER – VIII – ELECTIVE – I : 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.

Competitive 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 – Neocognitron 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 Unit – V : “INTRODUCTION TO ARTIFICIAL NEURAL SYSTEMS”, JACEK M.ZURADA – Jaico Publishing House (1994).

Reference Books:

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