SNS COLLEGE OF TECHNOLOGY

Coimbatore-35.

An Autonomous Institution

COURSE NAME : 19CST302   NEURAL NETWORKS AND DEEP LEARNING

III YEAR/ VI SEMESTER

UNIT – I   BASICS OF NEURAL NETWORKS

NEURONS

➢ Human brain cells, called neurons, form a complex, highly interconnected network and send electrical signals to each other to help humans process information. Similarly, an artificial neural network is made of artificial neurons that work together to solve a problem.

➢ The neuron is the basic working unit of the brain, a specialized cell designed to transmit information to other nerve cells, muscle, or gland cells. Neurons are cells within the nervous system that transmit information to other nerve cells, muscle, or gland cells.

NEURONS

Biological Neuron:

A human brain has billions of neurons. Neurons are interconnected nerve cells in the human brain that are involved in processing and transmitting chemical and electrical signals.
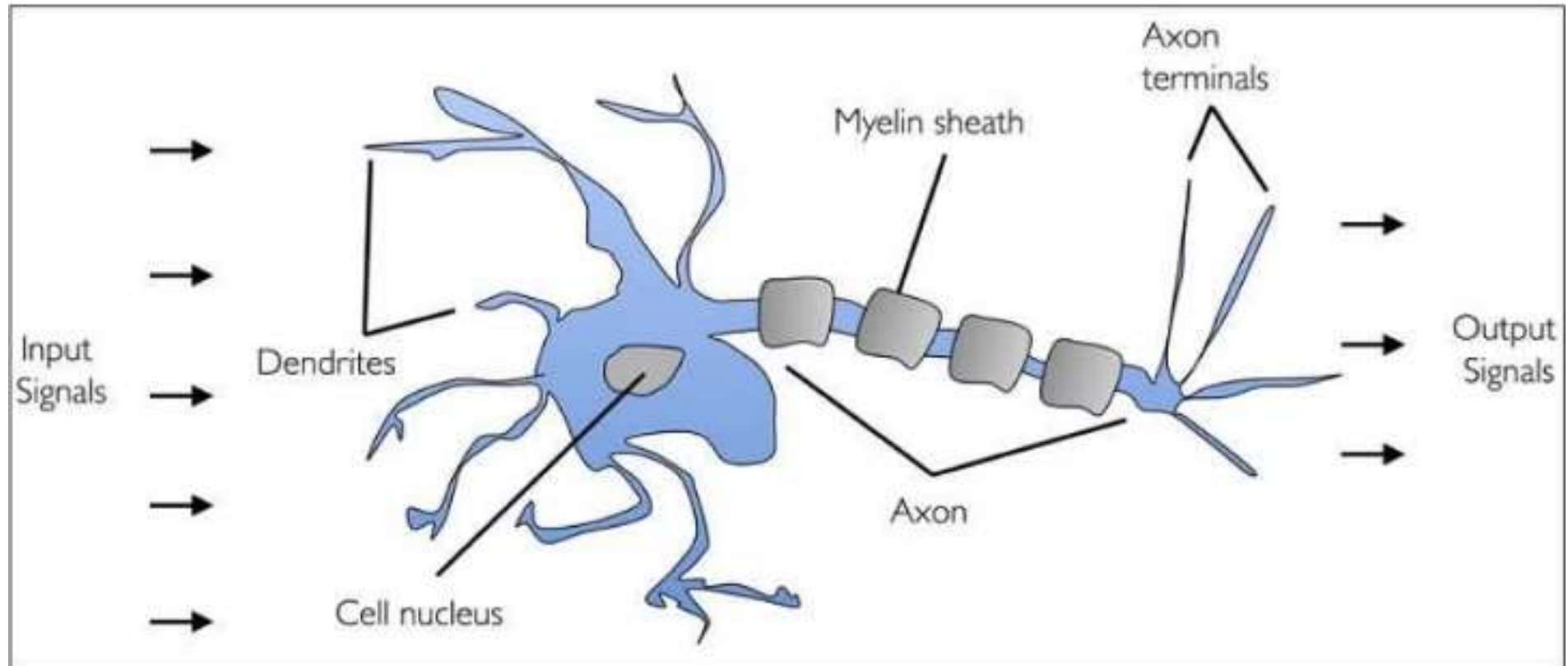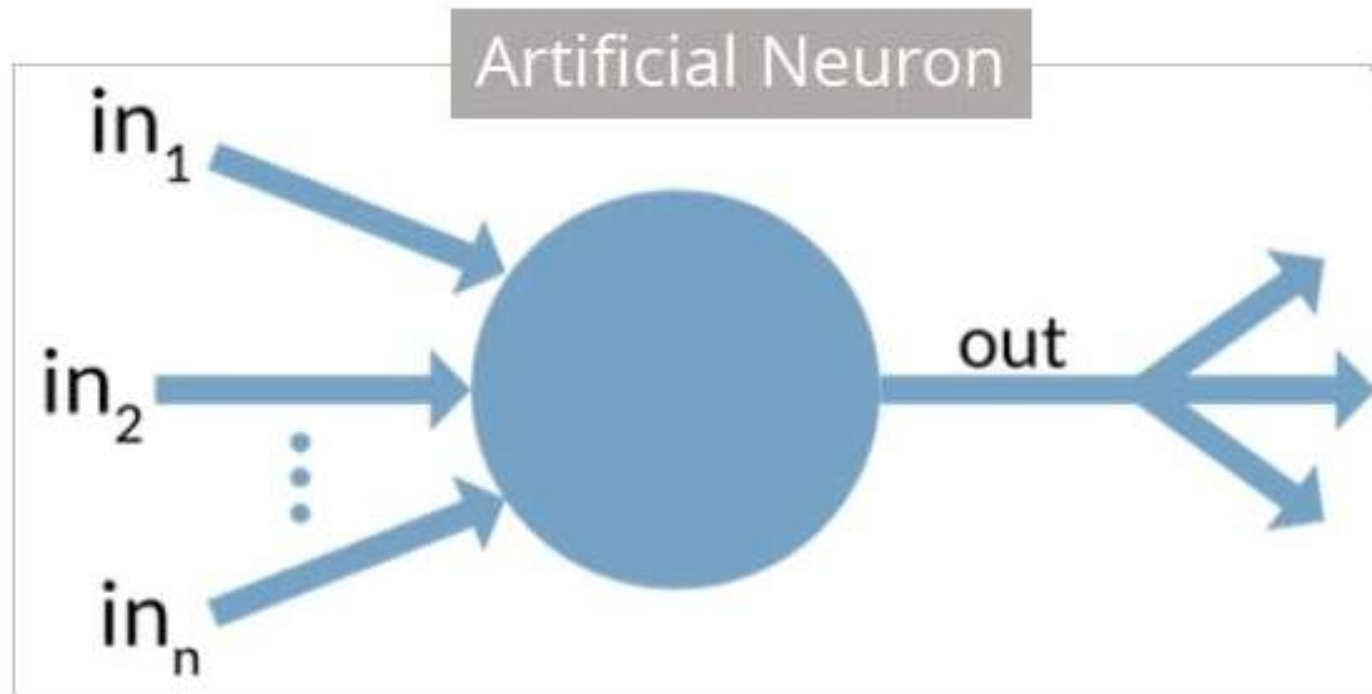
NEURONS

Artificial Neuron :

An artificial neuron is a mathematical function based on a model of biological neurons, where each neuron takes inputs, weighs them separately, sums them up and passes this sum through a nonlinear function to produce output.

Artificial Neuron

NEURONS

Types of Neurons :

➢ **Sensory neurons** - transmit information to enable our senses

➢ **Motor neurons** - transmit information to our muscles

➢ **Inter neurons** – initiates transmission between motor and sensory neurons.

NEURONS

Structural Classification of Neurons :

➢Unipolar neurons

➢Bipolar neurons

➢Multipolar neurons

NEURONS

Functions of a neurons :

➢Receive signals
➢Transmit signals throughout the body.

NEURONS

Perceptron **:**

> Perceptron was introduced by Frank Rosenblatt in 1957.
> He proposed a Perceptron learning rule based on the original MCP neuron.
> A Perceptron is an algorithm for supervised learning of binary classifiers.
> This algorithm enables neurons to learn and processes elements in the training set one at a time.