Neuron

Neurons are specialized cells which transmit impulses throughout the body. They are like wires within the body, which form a network - The Nervous system. The brain, the ganglia within the brain, the spinal cord, all the nerves in the body are all formed from individual nerve cells. They not only respond to touch, sound, light, pain, temperature and other stimuli, they also control various outputs from the body.

The structure of neuron can be divided into the cell body(also called soma), the dendrites, and the long axon. There are many dendrites, but usually a single axon. All the neurons are specialized in one or another way. Some specialize in conduction of signals to and from the spinal cord, some are specialized for touch, some for taste, some for receiving light signals and so on.

They are electrically excitable, just like wires, they transfer impulses from one part to another. This is achieved by
means of ion channels. In outside world, a signal of current electricity travels by the transfer of electrons, however within a nerve cell, the electrons are not responsible for conduction, instead the stimulus goes through the nerve cell, all along the axon, through changes in the polarization across the cell membrane. This change in polarization, usually depolarization travels along the length of the axon, and then leaves the axon through a synapse.

The synapse can be with dendrites of another neuron or an effector organ, which usually a muscle or a gland. There are some neurons which have a specialized myelin sheath, which comes from a cell called The Schwann cell. Now, this ‘myelination’ increases the speed of transfer of the signal along the nerve of the axon.