THE HUMAN NERVOUS SYSTEM

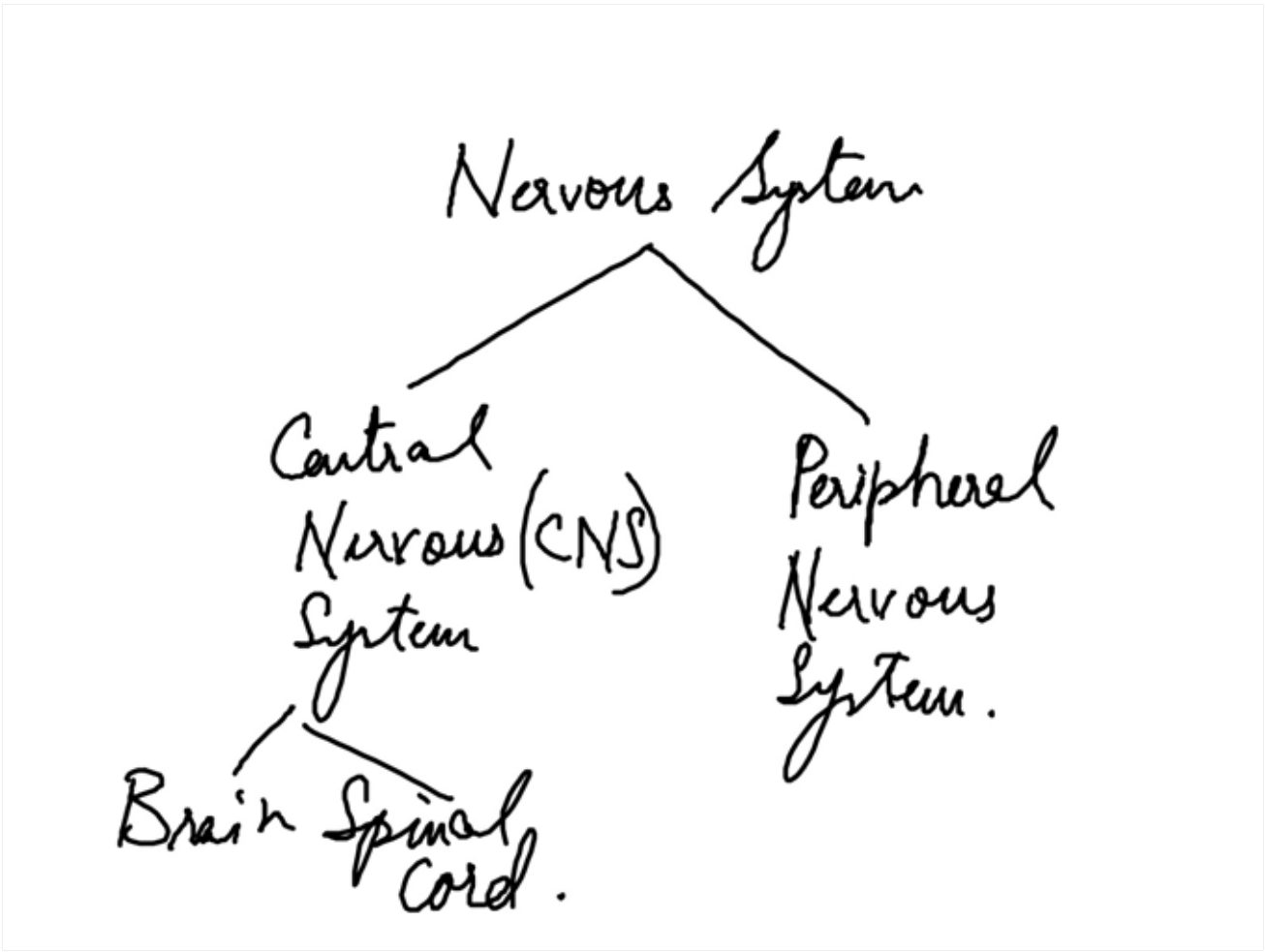
LEARNING OUTCOMES

Students will be able to:

1. differentiate between the cross sectional views of the brain and spinal cord with reference to white and grey matter;
2. define neuron and describe the structure of the neuron;
3. describe the types of neurons (sensory, motor and relay);
4. define voluntary and involuntary actions with examples;
5. name the three types of neurons involved in reflex action;
6. trace the path of a nervous impulse in case of a reflex action with examples from daily life.

The brain (cross section)

The spinal cord (cross section)


Nervous System
Central Nervous (CNS) System
Peripheral Nervous System.
Brain
Spinal Cord.

Neuron

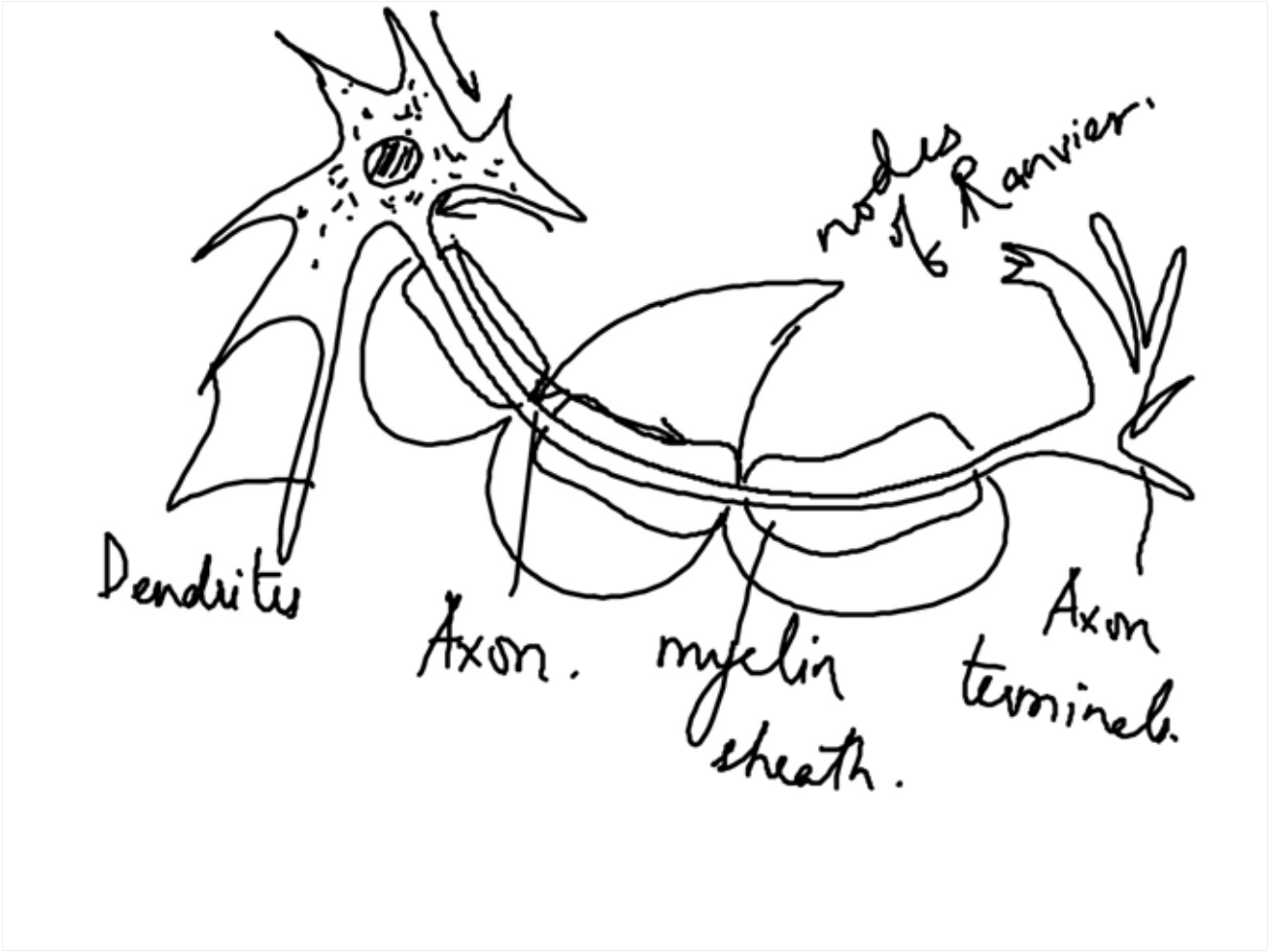
It is the structural and functional unit of the nervous system

TYPES OF NEURON

Sensory neuron

Motor neuron

Relay neuron


nodes of Ranvier.
Dendrites
Axon.
myelin sheath.
Axon terminals.

NEURON — Nervous System.

NEPHRON — Excretory system.

Voluntary action

Involuntary action

Reflex action

Reflex arc

Path of a nervous impulse in a reflex action

Multiple Choice Questions

1. The grey matter of the spinal cord contains

A. receptors.
B. cell bodies of motor neurons.
C. cell bodies of sensory neurons.
D. motor end-plates.

2. Electric wires are coated with rubber for insulation. Which part of a neuron serves the same function?

A. Dendrites
B. Neurilemma
C. Myelin sheath
D. Nodes of Ranvier

3. Which option describes the correct route for nervous co-ordination?

A. Effectors → sensory neurons → brain → motor neurons → receptors
B. Receptors → motor neurons → brain → sensory neurons → effectors
C. Effectors →motor neurons → brain → sensory neurons → receptors
D. Receptors → sensory neurons → brain → motor neurons → effectors