

Anatomy and Physiology 1 SI: Final Exam Test Prep

1. What are the two ways that cells communicate?

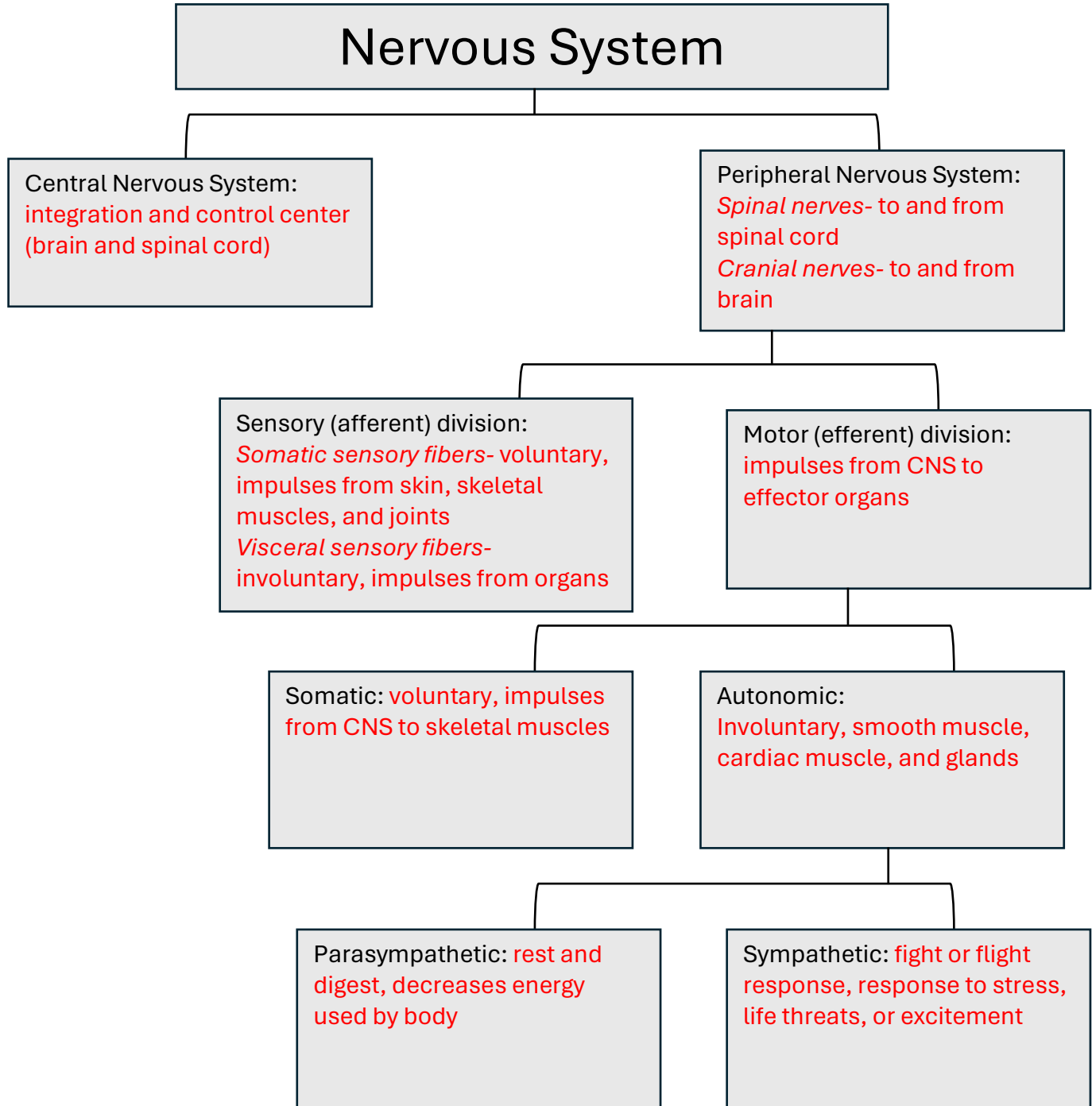
a. Electrical signals

b. Nervous system

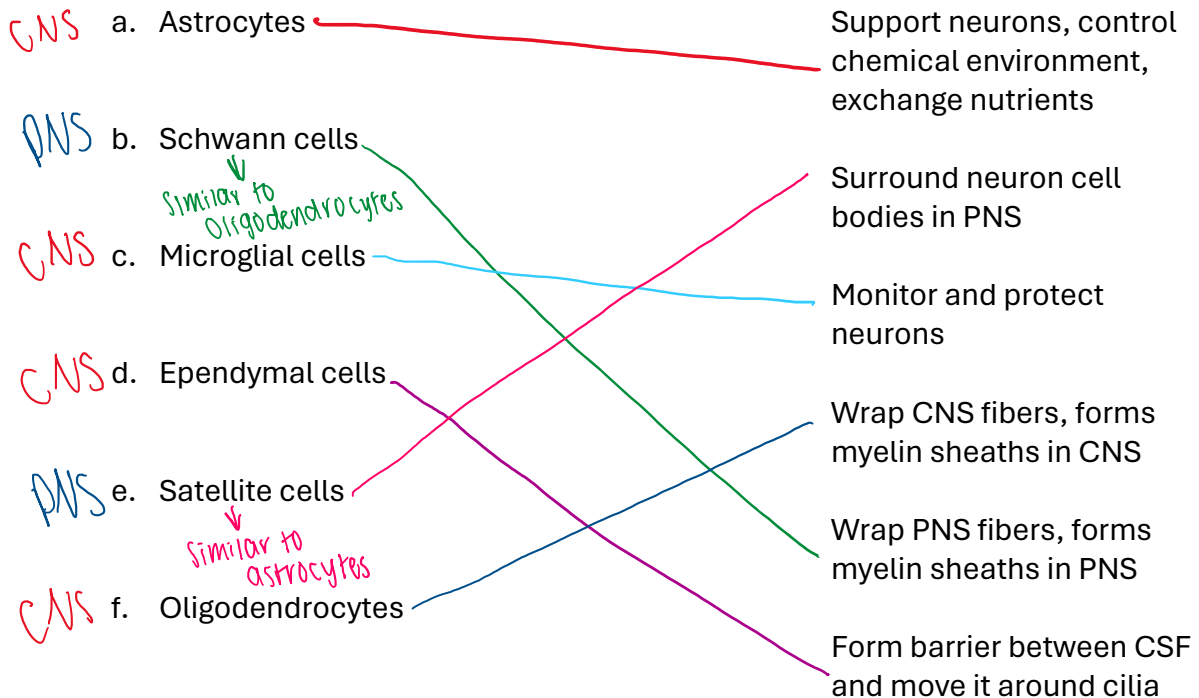
c. Chemical signals

d. Peripheral signals

2. Below is the break down of the nervous system, describe each.



3. Match the following cells with their function.



4. What do all neurons have?

- a. A cell body-synthesizes proteins, membranes, chemicals
- b. A cell body and processes**
- c. Tracts-bundles of processes in CNS
- d. Nerves-bundles of processes in PNS

5. Which of the following is not an overlapping function of the nervous system?

- a. Integration-processing/interpreting sensory input
- b. Sensory input-information picked up by sensory receptors
- c. Sensory output**
- d. Motor output-activation of effector organs for a response

6. Which process conveys incoming messages to the soma and generates graded potentials?

- a. Axons-generates action potential
- b. Neurons-structural unit of nervous system (conduct impulses)
- c. Perikaryon-cell body (synthesizes proteins, membranes, chemicals)
- d. Dendrites**

7. Which process propagates outgoing messages to the terminal and generates action potential?

- a. Axons**
- b. Neurons-structural unit of nervous system (conduct impulses)
- c. Perikaryon-cell body (synthesizes proteins, membranes, chemicals)
- d. Dendrites-generate graded potentials

8. What is the job of the myelin sheath?
- a. Slow down the impulse transmission
 - b. Protect the dendrites-not dendrites, but protects the axon
 - c. Speed up the impulse transmission
 - d. Chemically insulate axon-not chemically, but electrically insulates axon
9. Match the following functional classification of nerves to the direction they transmit impulses. NEURONS ARE CLASSIFIED SAME WAY (INTER=MIXED)
- | | |
|-------------------|-----------------|
| a. Sensory nerves | To and from CNS |
| b. Motor nerves | Toward CNS |
| c. Mixed nerves | Away from CNS |

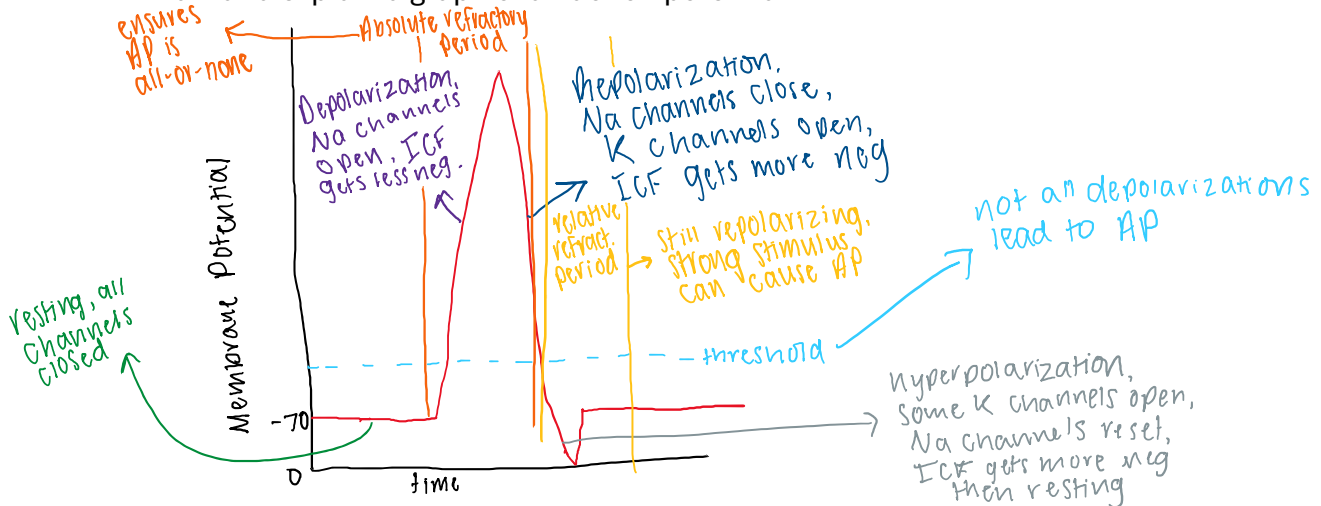
The Actual Impulse

10. What is the resting state of neurons called?
- a. Resting membrane potential
 - b. Depolarization-less negative
 - c. Repolarization-more negative to resting
 - d. Hyperpolarization-more negative past resting
11. What channels respond to neurotransmitters (such as Ach)
- a. Mechanically gated-physical deformation (sensory receptors)
 - b. Voltage gated-changes in membrane potential
 - c. Chemically gated
12. What is the resting membrane potential?
- a. -70 mV
 - b. -55 mV
 - c. -90 mV
 - d. -75 mV
13. Which side of the membrane has a higher concentration of sodium?
- a. ICF-higher potassium
 - b. ECF
14. What is the process of the sodium potassium pump? STABILIZES RMP
- a. 3 Na in, 2 K out
 - b. 2 Na out, 3 K in
 - c. 2 Na in, 3 K out
 - d. 3 Na out, 2 K in
15. What has to be present for an action potential to generate?
- a. Chemically-gated ion channels
 - b. Voltage-gated ion channels BECAUSE AP IS DESCRIBING THE MEMBRANE POTENTIAL
 - c. Electrically-gated ion channels
 - d. Mechanically-gated ion channels

16. Which step of an action potential results in the ICF becoming less negative?

- a. Resting membrane potential-resting state -70mV
- b. Depolarization**
- c. Repolarization-more negative to resting
- d. Hyperpolarization-more negative past resting

17. Draw and explain a graph of an action potential.



18. What type of neuron is sending the information? Conducts impulses TO synapse

- a. Presynaptic**
- b. Postsynaptic-transmits signal away from synapse (receives info)

19. Which type of potential brings a neuron closer to the threshold?

- a. Excitatory presynaptic potential
- b. Excitatory postsynaptic potential-causes depolarization**
- c. Inhibitory presynaptic potential
- d. Inhibitory postsynaptic potential-causes hyperpolarization

20. What type of neurotransmitter causes depolarization and binds to the ion channels?

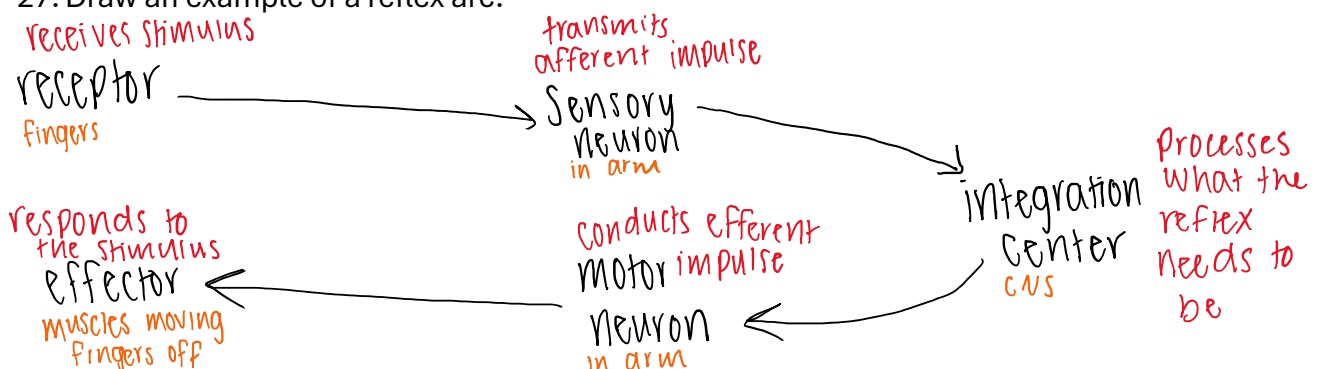
- a. Direct excitatory**
- b. Indirect excitatory-causes depolarization by binding to messengers
- c. Direct inhibitory-causes hyperpolarization by binding to channels
- d. Indirect inhibitory-causes hyperpolarization by binding to messengers

21. What is the difference between a nerve and a tract?

- a. Nerve is a bundle of axons in CNS, tract is a bundle of axons in PNS
- b. ~~Nerve~~ is a collection of perikaryons in CNS, ~~tract~~ is a collection of perikaryons in PNS- **nucleus:CNS, ganglion:PNS**
- c. ~~Nerve~~ is a collection of perikaryons in PNS, ~~tract~~ is a collection of perikaryons in CNS- **ganglion:PNS, nucleus:CNS**
- d. Nerve is a bundle of axons in PNS, tract is a bundle of axons in CNS**

22. What is the difference between ganglion and nucleus?
- Ganglion is a bundle of axons in CNS, nucleus is a bundle of axons in PNS
 - Ganglion is a collection of perikaryons in CNS, nucleus is a collection of perikaryons in PNS
 - Ganglion is a collection of perikaryons in PNS, nucleus is a collection of perikaryons in CNS
 - Ganglion is a bundle of axons in PNS, Nucleus is a bundle of axons in PNS
23. Which of the following is the site of the conscious mind?
- Cerebral cortex-**awareness, sensory, communication, memory, etc.**
 - Cerebellum- **balance, processes sensory info to coordinate movement**
 - Medulla oblongata-**reflex center**
 - Midbrain-**controls automatic behaviors for survival with brain stem**
24. What is the term that provides for the hemispheres controlling opposite sides of the body?
- Motor area-**controls voluntary movement**
 - Sensory area-**conscious awareness of sensation**
 - Association area-**integrates diverse information**
 - Contralateral
25. What system of the brain controls our emotions?
- Limbic system
 - Reticular formation-**sends impulses to cerebral cortex to keep it alert, filters out repetitive, weak, or familiar stimuli**
 - Lateralization-**division of labor between hemispheres (left=logic, right=arts)**
 - Reflexes-**automatic responses to stimuli**
26. What is the job of the cerebrospinal fluid (CSF)?
- Maintains stable environment for brain-**blood brain barrier**
 - Protects from trauma
 - Cover and protect CNS-**meninges**
 - Provides two-way communication between body and brain-**spinal cord**

27. Draw an example of a reflex arc.



28. What structure in the brain allows a person to get drunk, high, buzzed, etc.?

- Choroid plexus
- Corpus callosum
- Blood-brain barrier
- Melatonin