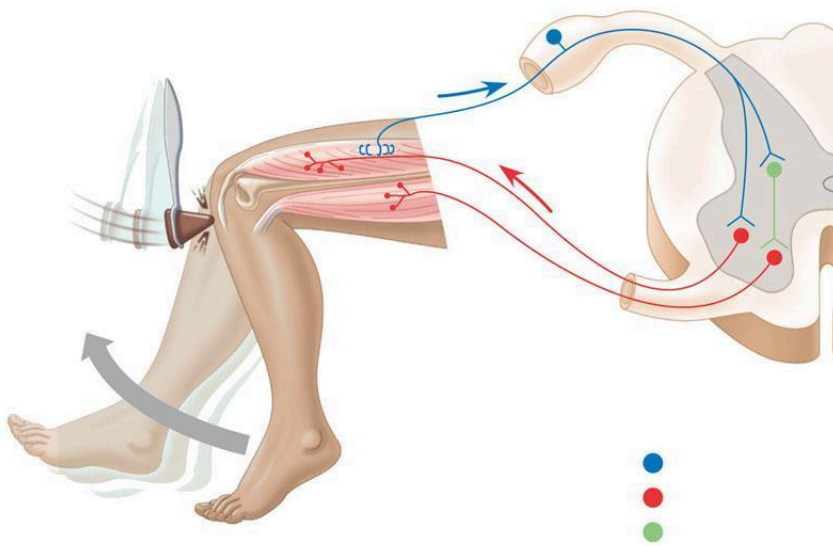


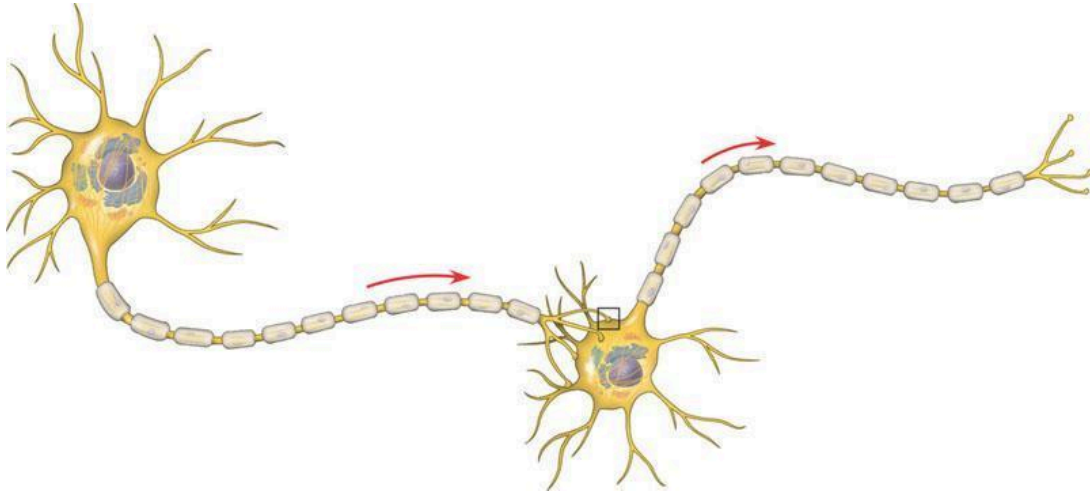
**AP Biology
Chapter 48 Guided Reading Assignment**

Name _____

1. What is a nerve net?
2. Compare and contrast the central and peripheral nervous systems.
3. How does the organization of the nervous system of a _____ compare with the organization of the nervous system of a _____?
 - a. Hydra and insect
 - b. Hydra and flatworm
 - c. Leech and salamander
4. What are the functions of the following:
 - a. Sensory neurons
 - b. Interneurons
 - c. Motor neurons
 - d. Effector cells
5. Use the diagram below to demonstrate the activity surrounding a reflex response.

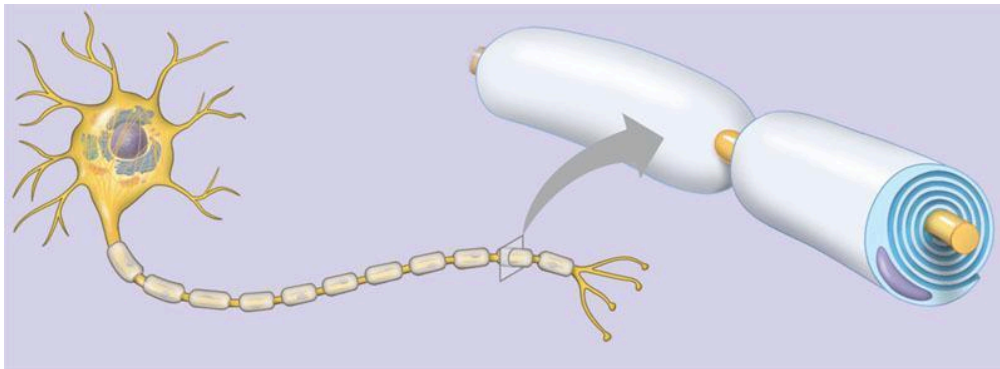


6. Label the neuron below – be prepared to label this on a quiz the day that this is due.



7. Why are glial cells important?
8. What are astrocytes?
9. What is the blood brain barrier and why is it important?

10. Label the diagram below and explain why myelin is important in nerve conduction?



11. Define the following terms:
- Membrane potential

b. Resting potential

12. Discuss the three types of gated ion channels below:

a. Stretch

b. Ligand

c. Voltage

13. Define the following terms:

a. Hyperpolarization

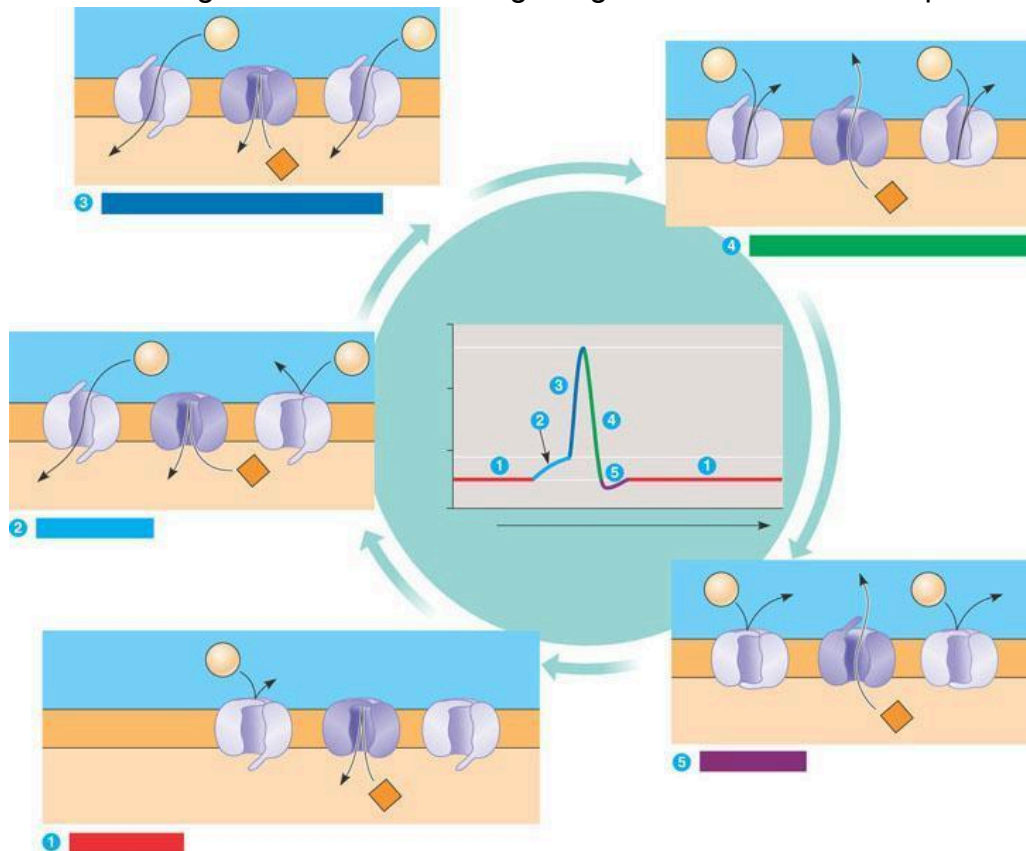
b. Depolarization

c. Graded potentials

d. Threshold

e. Action potential

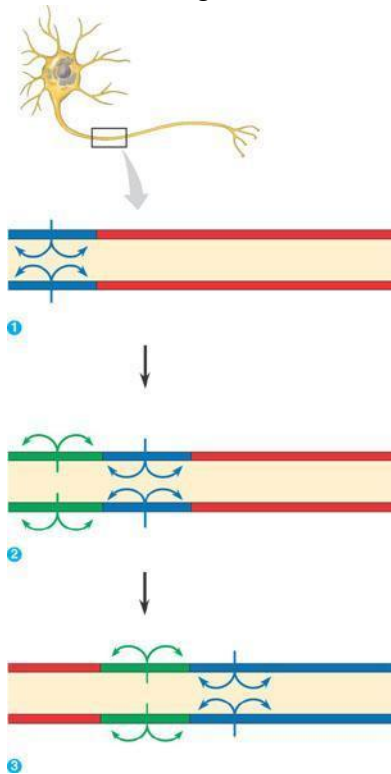
14. Label the diagram below concerning the generation of an action potential.



15. How do the various factors affect the speed of an action potential?

- a. Larger axon
- b. Myelination and salutatory conduction

16. Label the diagram below demonstrating the conduction of the action potential.



17. What happens at the synaptic cleft?

18. Contrast excitatory and inhibitory postsynaptic potentials.

19. Contrast temporal and spatial summation.

20. What happens when indirect synaptic transmission takes place?
21. Discuss the neurotransmitters listed below:
- a. Acetylcholine
 - b. Biogenic amines
 - i. Epinephrine and norepinephrine
 - ii. Dopamine
 - iii. Serotonin
 - c. GABA
 - d. Endorphins
 - e. Nitrous oxide
22. What is the difference between gray matter and white matter?
23. Define the following terms:
- a. Central nervous system
 - b. Peripheral nervous system
 - c. Somatic nervous system
 - d. Autonomic nervous system
24. Contrast the core functions of the parasympathetic and sympathetic nervous system.

25. What are the three brain region during embryonic development?
26. What are the parts of the brainstem and what are its functions?
27. What is the reticular formation?
28. What are the core functions of the cerebellum
29. What are the parts of the diencephalons and what are its functions?
30. What are circadian rhythms?
31. Describe the cerebral hemispheres.
32. What is the corpus callosum?
33. What is the limbic system and what is its function?