Biology Remote Learning Mirrer Yeshiva HS Rabbi Bresler

Chapter 35-2 The Nervous System *Introduction* May 27, 2020

This assignment is due Sunday Night May 31, 2020

First read pages 897-900

This subchapter is quite technical and requires a solid knowledge of some of the previous chapters of biology that we have previously done. Chapter 2 (chemistry) and 7 (cells) come to mind. Therefore, I am presenting a short introduction to help you understand this subchapter.

The nervous system transmits messages, impulses, through nerve cells called neurons. The chapter describes the various parts (structure) of the neuron, and their function in transmitting the impulse.

The nerve impulse works with electric **charges**. Electricity is the **flow** of electrons, identified with a (-) charge. Electricity will flow along a **conductor,** commonly a metal wire, similar to hot water flowing through a pipe. Nerves do not **conduct** electricity the way a metal wire does, electricity does not move along the nerves, after all nerves are not metal wires, so how do nerves carry the impulses? Pages 898-9 explain the amazing method based on cell wall protein channels, active transport, and the positively (+) charged potassium and sodium ions. Ion= an atom or molecule that has gained or lost one or more of its electrons, giving it a positive or negative charge. When there are more positively charged ions out of the cell then in, there will be a negative charge in the cell, and will cause a flow of ions across the cell membrane, **when they are able to by the opening of those protein channels. The impulses are passed along by the opening of the protein channels.**

Since one singe neuron does not travel directly to the brain, there are junctions called **synopses,** similar in function to a junction in an electrical system. Hope this helped!

Name_____ Mirrer Yeshiva HS May 27, 2020 Rabbi Bresler

Class __ ___Biology Remote Learning **Chapter 35-2 The Nervous System**

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Page 897

Name the 3 types of neurons and their function:

1. _____function:_____

_____

2. _____function:_____

_____

3. _____function:_____

_____

The question below is worth 30 points

4. Explain, how when a stimulus activates a nerve impulse in a neuron, does the neuron react and the impulse to the next neuron. Please use the terms resting potential, action potential, cell wall protein channels, active transport, and the positively (+) charged potassium and sodium ions in your explanation.

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Page 897-8

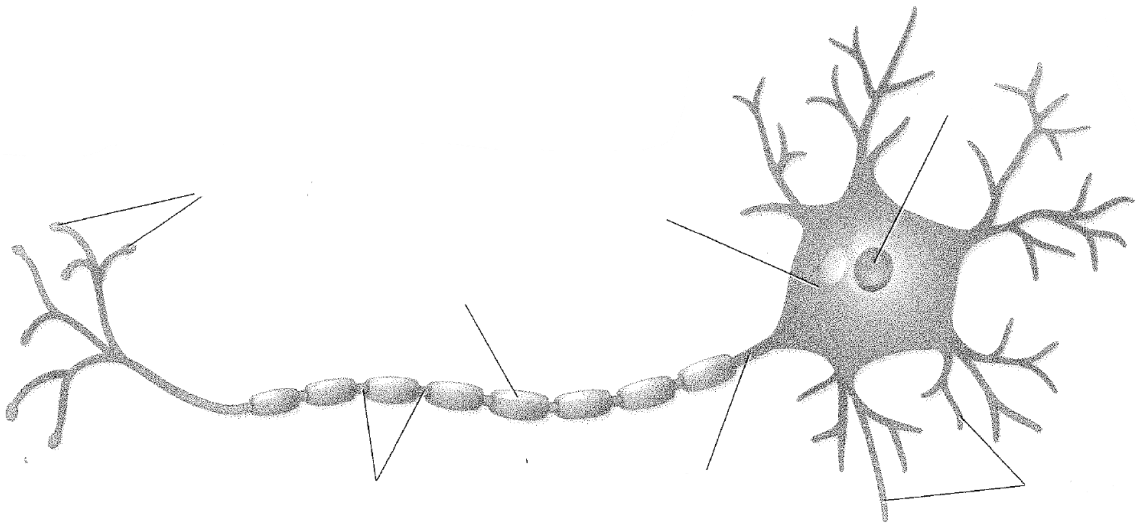
5. Describe the structure of a neuron. _____

_____

_____

_____

6. Label all the different parts of a neuron in the diagram below: (figure 35-5)



7. One reason that electricity can be deadly is because it can stop the heart and other life dependent functions. Based on your knowledge of this chapter, explain how it can trigger these events. _____

_____

_____

8. Fill out the flowchart bellow to show the events that happen as a nerve impulse travels from one neuron to the next. Note: It has already entered the first neuron. Event #1 is filled in.