

Practice Quiz Chapter 3 NB Neurons¹

1. Identify the following parts of a neuron:

- a. The part labeled A in the picture looks like a tree roots and receives information from other neurons. It is called

_____.

- b. The part labeled B is a thin fiber that carries action potentials from part A to Part C. This part B is

called the _____.

- c. Part C is the gap between neurons. When an action potential reaches Part C, molecule are released into this gap. What are these molecules called ?

- d. This gap between neurons at part C is called the _____

2. The term “all or nothing” (as used in our chapter) is analogous to: (circle all that apply)

- A gun firing
- Pregnancy
- Hand grip strength
- Brightness of a flashlight

3. Some axons are covered by a layer of insulation that has gaps in it. This insulation is called _____ and it serves the purpose of _____.

- The Insulation, protecting the axon from damage
- Myelin Sheath, speeding up the neural impulse
- Copper Fit, helping strengthen the axon
- None of the above

4. When I put my finger on a hot plate, _____ neurons send that information to the brain or spinal chord and then _____ neurons send information to the muscle to contract.

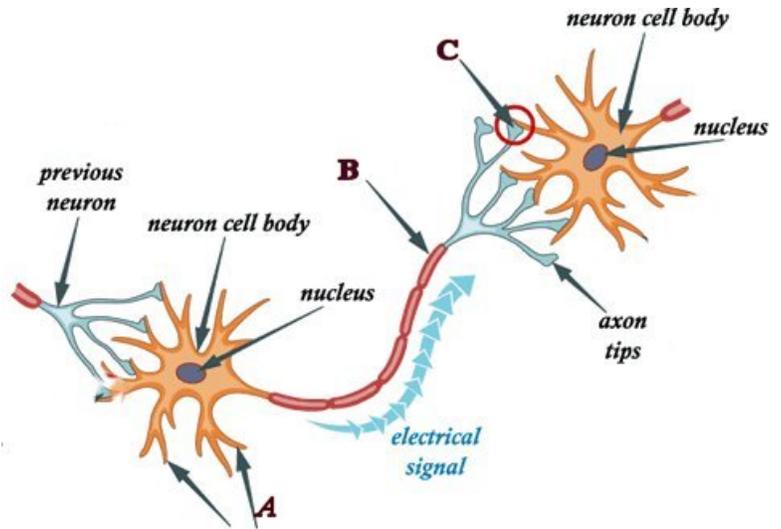
5. What is an “action potential”? Circle True or False.

True False a) when the voltage of the inside of the neuron changes from -70 mv to about +30 mv.

True False b). When the sodium gates open and sodium rushes into the neuron.

True False c). It is a flow of electrical current down the axon resulting in the release of chemical messengers when it reaches the end of the neuron.

True False d) An action potential refers the fact that all neurons have the potential for action

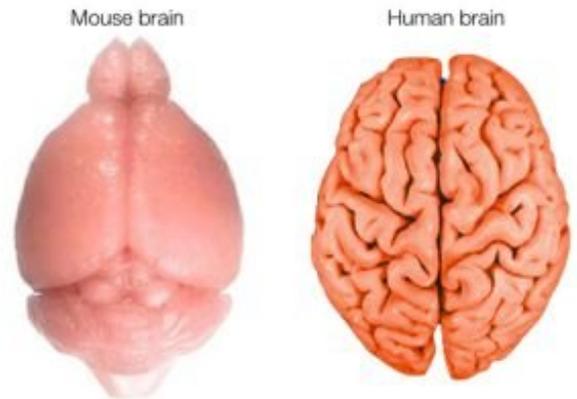


6. Complete the following:

- You are walking in the woods and a bear crosses your path. Your _____ nervous system will become activated in order to help you fight or flee.
- Once you are out of danger, your _____ nervous system will take over so that your body can return to its normal resting state.

7. Why would someone want a cortex that is rippled?

- Rippled allows for easier draining
- Smooth allows for easier cleaning
- A smaller brain is more effective with a smooth cortex
- A rippled brain allows for more surface area



8. Hector and his group of friends went to a club.

The bouncer at the door said he would let the ladies in but not the men. Because Hector had just read chapter 1, he said, “hey this sounds just like a concept I read in my psychology book”.

What concept was he referring to?

- the all-or-none principle
- selectively/semi permeable
- reuptake
- phrenology

9. Alice works in the mail room of a huge company. The rules state that before anyone down there can make a decision they must ask the president for permission. Then the president will send his permission (or not) back down to them as quickly as possible. However, when a new hire name Matt can across a problem, he decided he was going to make a decision without asking the president. After discussing the problem with a few others down in the basement, he acted, without asking permission from the president. This is a good analogy to what concept in the text?

- reuptake
- reaching the threshold
- reflex arc or reflex
- ”walking the dog”

10. You probably will need to listen to lecture before you can answer this question.

Bill is a split brain patient. He is looking straight ahead and gets a ball quickly flashed way off to his left. When he turns his head, the image is gone.

- What hemisphere received the image of the ball? (Circle one) left right
- If he was asked what he saw, what would he say?
(Circle one) Ball I didn't see anything
- If many object were laying in front of him and he was asked to use one hand to pick the one that was flashed to him, which hand could successfully identify the object that was flashed to him? (circle one) right hand left hand

Tie Breaker

1. Acetylcholine, norepinephrine, dopamine, and GABA are all examples of:
 - a. Hormones
 - b. Synaptic ions
 - c. Neurotransmitters
 - d. Neurilemmas

2. Bill is walking into the doctor's office dragging his left foot. The doctor suspects a stroke. The doctor believes the stroke is:
 - a. In Bill's occipital lobe
 - b. In Bill's Broca's area
 - c. In Bill's right hemisphere
 - d. In Bill's brain stem

Sudden Death.

Action Potential: Fill in each blank by drawing from the words below the paragraph.

At rest, a neuron is like a battery in the sense that it has a "_____".

In other words, at rest the electrical charge inside the neuron is _____

compared to the outside. With stimulation from other _____, this voltage difference

may become _____ than it is at rest. If this negative inside electrical charge is reduced

enough, it is said to cross a _____ and an action _____

is generated. This means the inside of the cell becomes positive when positively charged

_____ are allowed to rush into the cell. This process is referred to as _____

in the same sense that a gun either fires or not. You can't half fire a gun. In other words, the

output is the same each time regardless of the input. This voltage change then runs along the

length of the _____ until it reaches the end of the neuron where

_____ are released into the _____ (the gap between

neurons). These chemical messengers then either make the next neuron either more likely to fire

(excite) or less likely to fire (_____) the dendrites of the next neuron.

Axon Excite Neurons All of nothing negative Neurotransmitters Less Inhibit
 Sodium ions Resting potential Chlorine ions Synapse Dendrites Positive More
 Threshold potential