**Psych-Sim Online: Neural Messages**

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**Course/Section: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Instructor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Neuron Anatomy**

Watch this video: <https://www.khanacademy.org/science/biology/human-biology/neuron-nervous-system/v/anatomy-of-a-neuron>

Match the part of the neuron identified with its description:

* \_\_\_ Axon A. Contains the nucleus, which controls the

function of the entire cell

* \_\_\_ Axon terminals B. Make up the myelin sheath in the peripheral nervous

system

* \_\_\_ Cell body (soma) C. Receive signals from other nerve cells
* \_\_\_ Dendrites D. Spaces between myelin sheath on the axon
* \_\_\_ Schwann cells E. Carry signals towards other nerve cells
* \_\_\_ Nodes of Ranvier F. Make connections to target cells

**Action Potentials**

Watch this video: <https://www.youtube.com/watch?v=OZG8M_ldA1M>

Underline or highlight the correct answer for each of the bolded options:

* Sodium is **positive/negative** and is on the **inside/outside** of the resting cell
* Potassium is **positive/negative** and is on the **inside/outside** of the resting cell

Match the number to the activity at each stage of the membrane potential:



1

2

3

4

5

6

7

1. \_\_\_\_\_ A. Hyperpolarization; potassium continues to leave the cell
2. \_\_\_\_\_ B. Sodium channels open and sodium enters the cell
3. \_\_\_\_\_ C. Refractory period; Sodium-potassium pump resets the sodium

 and potassium levels

1. \_\_\_\_\_ D. Resting potential
2. \_\_\_\_\_ E. Repolarization; potassium channels are open, potassium leaves

 the cell

1. \_\_\_\_\_ F. Resting potential
2. \_\_\_\_\_ G. Depolarization; sodium stops entering the cell

What happens when an axon is coated in a myelin sheath?

**Membrane Permeability**

Watch this video: <https://www.youtube.com/watch?v=dPKvHrD1eS4>

1. What does it mean to say that a cell’s membrane is “selectively permeable?”
2. Explain the difference between active transport (e.g., the sodium-potassium pump) and passive transport (e.g., water).
3. What is the structure and function of a vesicle?