ROSEDALE ACADEMY

Nerve Signaling: Synapses & Action Potentials Handout

As you work your way through the nerve signaling: synapses & action potentials presentation, answer the following questions to help you collect the relevant information.

1. **What is nerve signaling? What is its purpose?**

2. **What is membrane potential?**

3. **What is a neuron's resting membrane potential? Through what ion channel is it able to achieve this potential?**

4. **List and describe the 6 steps of an action potential.**

5. **What does it mean for an action potential to have an "all-or-nothing" characteristic?**

6. **Describe and explain how conduction works in myelinated axons.**

7. **What are the two types of synapses that exist? Describe how each of these functions.**

8. **Listed are some of the components involved in conduction via a chemical synapse. Describe the properties and functions of each.**

   I. **Voltage gated Ca++ channel**

   II. **Synaptic vesicle**

III. Neurotransmitters

9. **Describe the differences between a chemical and electrical synapse.**

10. **In multiple sclerosis, myelin is progressively lost from axons and replaced by hardened scar tissue. Given what you have learned about the function of myelin, explain how the degradation of myelin might affect the transmission of nerve impulses.**