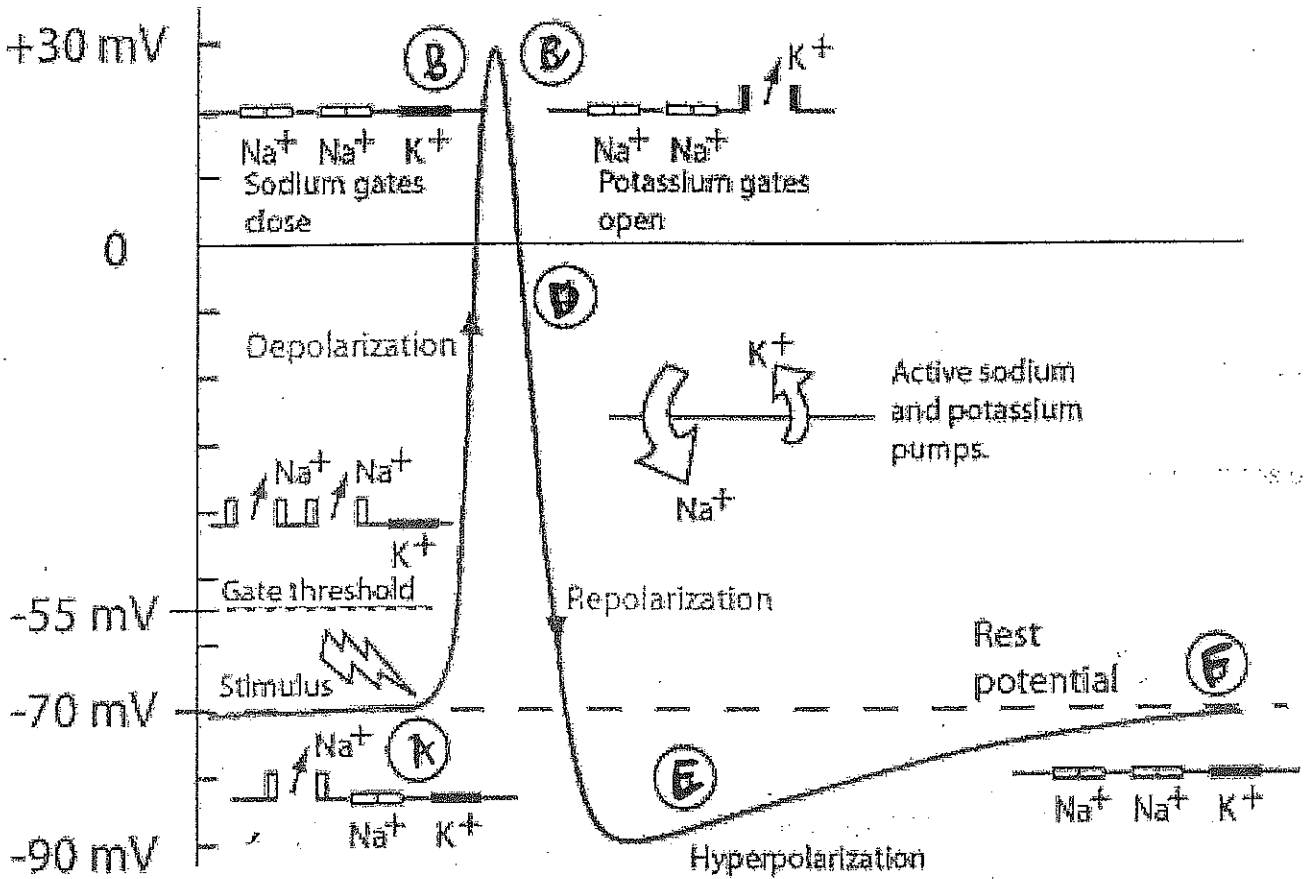


Honors Physiology
Steps of an Action Potential

Name: _____

Directions: Using textbook pages 402 – 404, your notes, and the image below, describe the steps of an action potential. When you are finished, answer the questions on the back of this page.



Step 1: Resting Potential

Step 2: Depolarization

Step 3: Repolarization

Step 4: Hyperpolarization

Discussion Questions:

1. What term is used to describe a neuron that is not transmitting a signal?
2. Describe the conditions inside and outside of a neuron during resting potential.
3. Describe the conditions inside and outside of a neuron during action potential.
4. What causes a neuron to change from resting potential to action potential?
5. What causes a neuron to return to a resting potential from an action potential?
6. How is a signal transmitted through a single neuron?
7. What is a neurotransmitter?
8. How are neurotransmitters secreted into the synaptic cleft?
9. How does a neurotransmitter cause an action potential in a receiving neuron?
10. How is the signal between neurons stopped?
11. **CRITICAL THINKING** - Many drugs, even common ones such as caffeine and alcohol, affect the actions of neurotransmitters. Some drugs mimic neurotransmitters while others block the ability of specific neurotransmitters to bind to receptor molecules. Explain why the overuse of such drugs could be harmful.