

Name _____

Date _____

PhysioEx 6: Frog Cardiac Physiology
Human Physiology
Dr. L Hays

Refractory Period

1. Define the term extrasystole. After an extrasystole, the heart experiences a _____ pause. During which portion of the cardiac cycle was it possible to induce an extrasystole? Explain your answer.

2. Define the term tetanus which is commonly used in skeletal muscle. Explain why it is important that the heart muscle cannot be tetanized and has a long absolute refractory period.

Vagus nerve

3. The vagus nerve is Cranial nerve # _____. It is part of the _____pathetic nervous system.

When the vagus nerve is stimulated, it causes the rate of beating to _____. After receiving multiple stimuli, the heart beats _____. As the nerve continues to be stimulated the heart began to _____.

Describe the phenomenon of vagal escape and the reason why the body has such a mechanism.

Physical Modifiers

4. The baseline heart rate of the frog in 23 °C Ringer's solution is _____ b.p.m.
Explain why the heart rate changes when bathed in 5 °C and 32 °C Ringer's solution.

Chemical Modifiers

5. Compare how pilocarpine and atropine alter the frog heart rate. Explain the physiology of these results.

6. Describe why the addition extracellular K^+ changes frog heart rate and why an ectopic pacemaker might be found in such a heart.