

# Bioengineering/Physiology 6000 Sample Quiz, 2014

Date: Friday, March 7, 2014

1) Answer the following true/false questions and provide a short (1-3 sentences) explanation for each answer:

Value 50%

1. Confocal microscopy is an important technique in physiological studies because it allows much higher magnification than other types of light microscopy.

2. A feature common to the action potentials of all cells in the heart is that they require a sodium ( $\text{Na}^+$ ) current for the upstroke.

3. The heart is capable of beating regularly without input from the brain.

- 2) An electrophysiologist wishes to determine whether calcium ( $\text{Ca}^{+2}$ ) plays an meaningful role in determining the resting potential of a cell from the sino-atrial (SA) node in the heart. Describe the type of experiment the electrophysiologist might reasonably carry out to determine this relationship. Value 50%