# **Lab 6: Muscle Physiology**

## **POST –LAB DATA SHEET AND WRITE –UP (15 POINTS)**

Name(s) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. (1 point) How does the length of the contraction period differ from that of the relaxation period?
2. (1 point) Within a certain range, why does the muscle twitch amplitude increase when the stimulus current is increased?
3. (1 point) Above a certain stimulus current, the amplitude of the finger twitch no longer increases. Why does this happen?
4. (1 point) Why is it important for motor units to fire asynchronously during a normal movement (for example: lifting and holding a bucket of water by bending your elbow)?
5. (2 points) Explain the difference between complete and incomplete tetanus?
6. (1 point) Compared to a single muscle twitch, how much greater is the amplitude of complete tetanus?
7. (1 point) Why is the rate of muscle relaxation much slower after tetanus than after a single twitch?
8. (1 point) You may have noticed that the level of constant tension that occurs during tetanus decreased as the tetanus continued? Why does this occur?
9. (2 points) List at least 3 factors that can affect muscle fatigue?
10. (1 point) What two factors determine the amount of force generated by a whole muscle?
11. (3 points) Graph, label, and explain the 3 phases of muscle twitch.