Muscle tissue Review

1. What are the general functions of the 3 types of muscle tissue?

2. Differentiate between the 3 types of muscle tissue.
   a. What does the cell look like?
   b. Is the muscle voluntary or involuntary?
   c. What type of receptors does it have?
   d. What type of neurotransmitter stimulates it?
   e. Does this muscle contain myoglobin?
   f. Which one has intercalated disks?

3. Know the parts of a muscle cell and their functions.
   a. sarcolemma, t-tubule, sarcoplasmic reticulum, thick and thin myofilaments, troponin and tropomyosin

4. Define a motor unit.

5. Know the connective tissue wrappings of a muscle.
   a. endomysium, perimysium, epimysium

6. Define muscular attachments.
   a. tendon vs. aponeurosis
   b. origin vs. insertion
   c. intrinsic vs. extrinsic

7. Be able to categorize muscles by their role in movement.
   a. Prime mover, synergist, antagonist

8. Understand the sequence of events that occur in the contraction of a muscle.
   a. Action potential to calcium release to cross-bridge formation, power stroke and release of cross-bridge, end of contraction

9. Compare isotonic versus isometric contractions.
   a. Which one involves shortening of the muscle?
   b. Which one is important in maintaining posture?

10. Know the 3 sources of ATP for muscular contraction.
    a. cellular respiration, creatine phosphate, fermentation
    b. Which one do we use when oxygen is sufficient?
    c. When oxygen is deficient?
    d. Also know the Cori cycle for the recycling of lactic acid.

11. Know the 3 phases of a muscle twitch and what is occurring during each phase.
    Also identify how the twitches differ for the 3 types of muscle.
12. Understand how changing the strength of the stimulus or frequency can alter the twitch.
   a. recruitment, treppe, summation, tetanus

13. Understand how certain factors will affect the functioning of the muscle.
   a. stretching, temperature, fatigue, injury, aerobic and anaerobic exercise

14. Differentiate between red and white muscle fibers.
   a. Which ones contain the most mitochondria and myoglobin?
   b. Which ones are the quickest to fatigue?
   c. Which ones are better for endurance activity?
   d. Which ones can increase in size with training?

15. Differentiate between muscle efficiency and endurance.