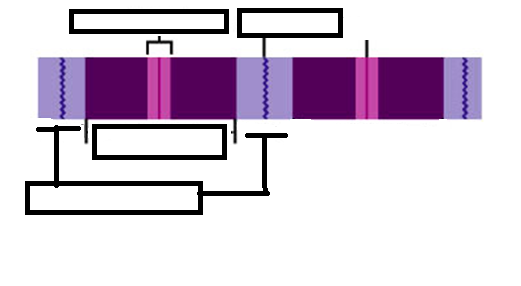
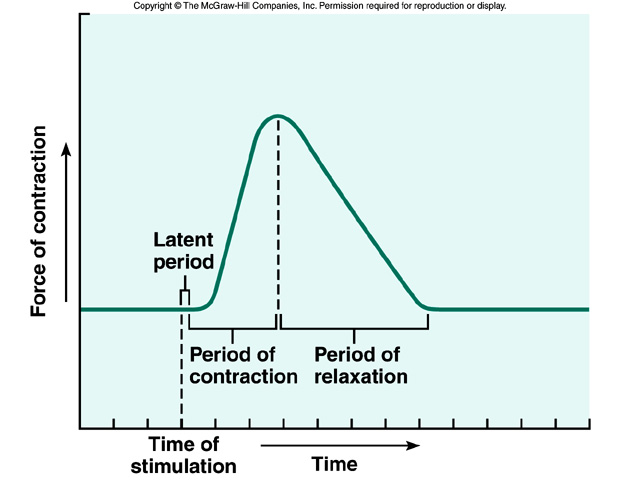
Bio 160 Muscular System Exam

1. Name the three types of muscle tissue.
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What is the name of the connective tissue that separates muscles from each other?
   1. Fascia
   2. Periosteum
   3. Epimysium
   4. Perimysium
   5. Endomysium
3. Please name the layers of connective tissue from the **deepest layer to the most superficial layer**.

Muscle fiber: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What kind of shape do muscle cells resemble?
   1. Circle
   2. Square
   3. Cylinder
   4. Polyhedron
   5. Prism
2. What causes the striations in skeletal music tissue?
   1. Thick filaments
   2. Thin filaments
   3. Thick and thin filaments
   4. Z line
   5. H zone
3. Please describe and draw the sarcomere. Make sure to include A bands, I bands, H zone, M Line, and Z line. You may use the drawn image to help you explain what a sarcomere is. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



1. In skeletal muscle, what neurotransmitter is released at the neuromuscular junction in order for a muscle to contract?
   1. Acetylcholine
   2. Acetylcholinesterase
   3. Norepinephrine
   4. Epinephrine
   5. Dopamine
2. What allows the muscle to relax after it has contracted?
   1. Acetylcholine
   2. Acetylcholinesterase
   3. Norepinephrine
   4. Epinephrine
   5. Dopamine
3. What is the name of the enzyme that breaks down ATP?
   1. ATPase
   2. ADPase
   3. Acetylcholinesterase
   4. Lipase
   5. Amylase
4. In your own words, please describe the sliding filament theory. What is the function of this process? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. What protein makes up the thick filaments?
   1. Actin
   2. Myosin
   3. Tropomyosin
   4. Troponin
   5. Myothic
6. What ion is released from the sarcoplasmic reticulum in order for a muscle to contract?
   1. Sodium
   2. Potassium
   3. Calcium
   4. Phosphate
   5. Water
7. What biochemical is responsible for regenerating ATP from ADP?
   1. Creatine Phosphate
   2. Norepinephrine
   3. Epinephrine
   4. Acetylcholine
   5. Dopamine
8. Short answer. What is the function of hemoglobin? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. Short answer. Where can I find myoglobin and what is the function? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. Short answer. Several hours after death, skeletal muscles go under partial contraction that fixes the joints, called rigor mortis. Why does this happen? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. What must muscles reach in order to contract?
    1. Twitch
    2. All or none response
    3. Threshold stimulus
    4. Myogram
    5. Period of contraction
12. Label. Please label this graph in order to explain what is happening at each point. *Use the following words Period of relaxation, period of contraction, and latent period.*
13. What is it called when a contraction is sustained and lacks any relaxation?
    1. Summation
    2. Twitch
    3. Tetanic Contraction
    4. Muscle recruitments
    5. Motor end plate
14. What are skeletal muscle undergoing when you pick up an object that is heavier than what you thought? Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
15. Compare and contrast multiunit smooth muscle and visceral smooth muscle. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
16. What is the word for the wavelike motion that hollow organs do to move things along? For example, your small intestines moving food along.
    1. Psoriasis
    2. Peristalsis
    3. Paralysis
    4. Dialysis
    5. Periosteum
17. What is self-exciting and rhythmic?
    1. Cardio
    2. Cardiac muscle
    3. Cardi B
    4. Smooth muscle
    5. Skeletal muscle
18. What is one of the components in the heart that allows the heart to beat?
    1. Intervertebral disks
    2. Intercalated disks
    3. Peristalsis
    4. Calcium
    5. The brain
19. The relationship between the biceps brachii and triceps brachii are examples of \_\_\_\_\_\_\_\_\_\_\_?
    1. Prime mover
    2. Synergists
    3. Antagonists
    4. Synchronized
    5. Fire and gasoline