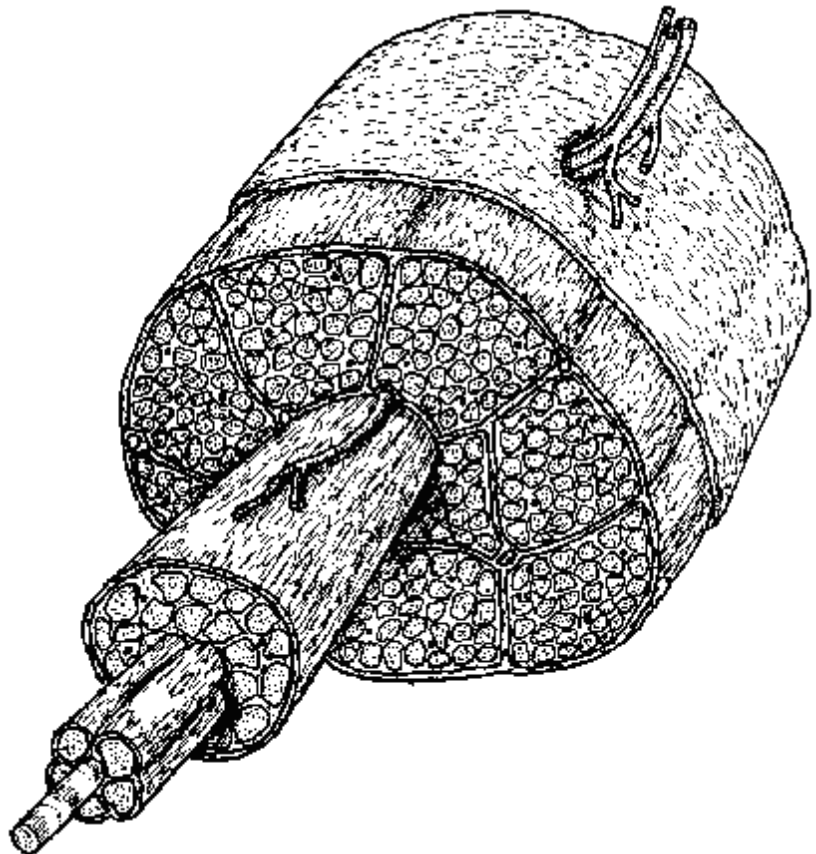


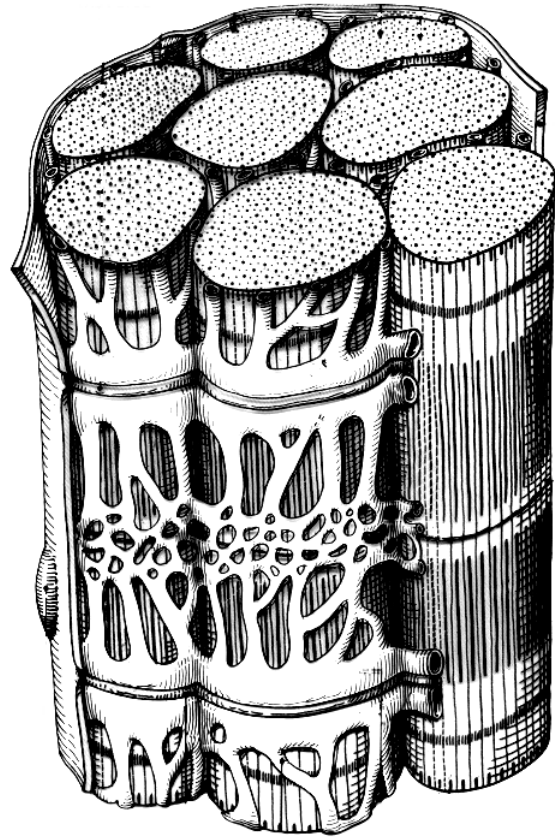
MOVEMENT & LOCOMOTION

PHYSIOLOGICAL PROPERTIES OF MUSCLE TISSUE

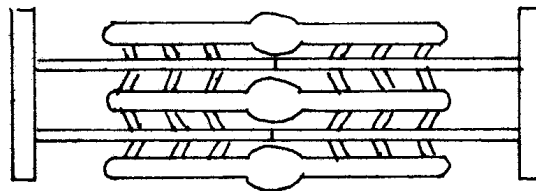
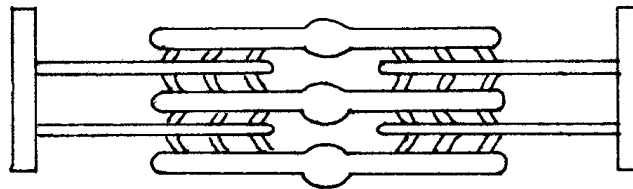
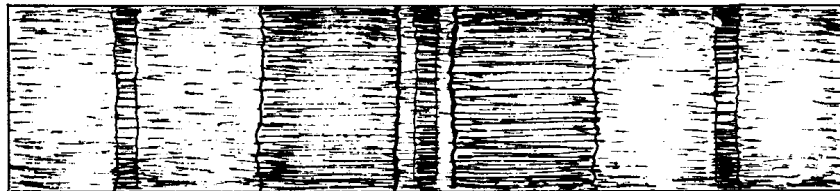
ORGANIZATION OF SKELETAL MUSCLE



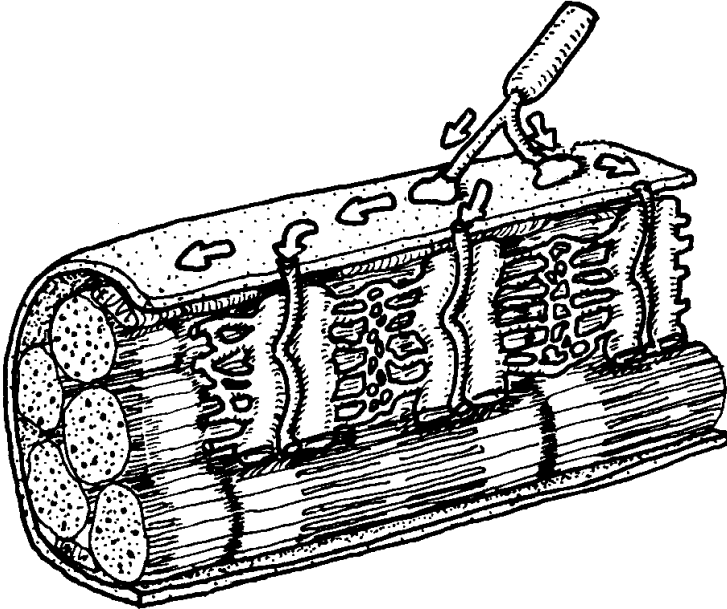
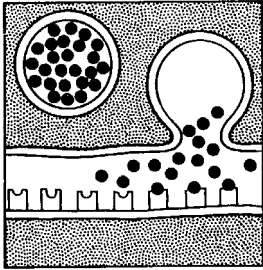
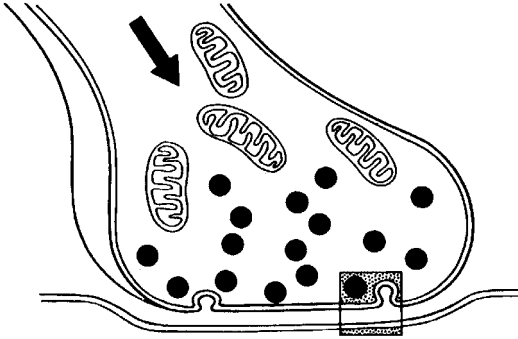
MUSCLE CELL SPECIALIZATION

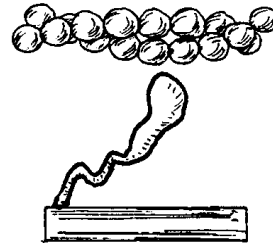
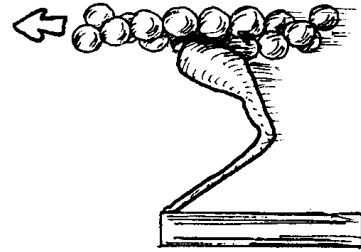
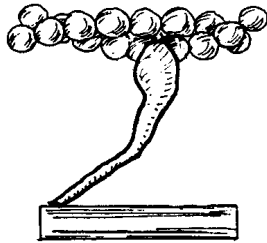


SARCOMERE



MUSCLE CONTRACTION





QUESTIONS

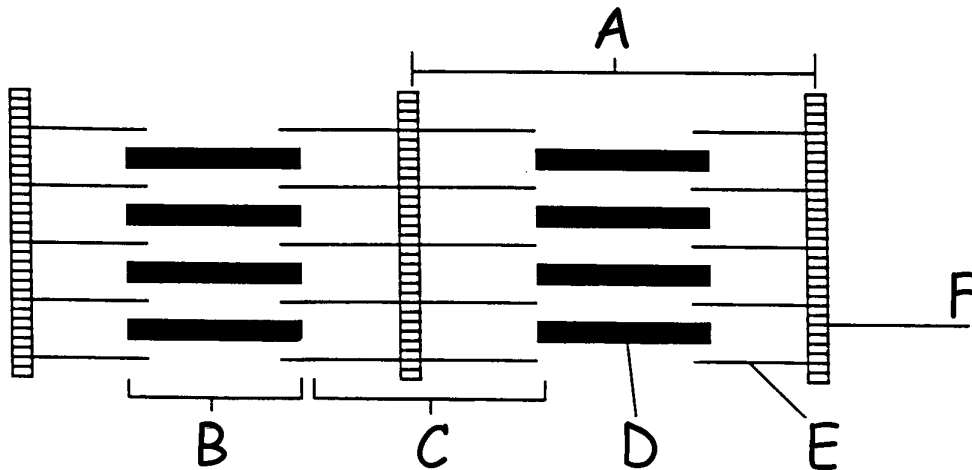
1. Match the structure with the correct description.

- | | | |
|-------|---|---------------|
| _____ | The connective tissue that surrounds a muscle | A. Endomysium |
| _____ | Connective tissue that encloses a bundle of muscle fibers | B. Epimysium |
| _____ | Bundle of muscle fibers | C. Fascicle |
| _____ | Connective tissue wrapped around each muscle fiber | D. Fiber |
| _____ | Strong cord of fibrous connective tissue; extends from the muscle to the bone | E. Myofibril |
| _____ | Muscle cell | F. Perimysium |
| _____ | Smaller fibers that are found in a muscle fiber; consist of thick and thin myofilaments | G. Tendon |

2. Match the structure with the correct description.

- | | |
|--|---------------------------|
| _____ Thick & thin threads found in myofibrils | A. Actin |
| _____ Thick myofilaments | B. Myofilaments |
| _____ Thin myofilaments | C. Myosin |
| _____ Plasma membrane surrounding each muscle fiber | D. Sarcolemma |
| _____ Specialized cytoplasm found in muscle fibers | E. Sarcomere |
| _____ Network of tubes and sacs; specialized endoplasmic reticulum | F. Sarcoplasm |
| _____ Series of tubular organelles that run across fibers; cross sarcoplasmic reticula at right angles | G. Sarcoplasmic reticulum |
| _____ Unit of muscle contraction | H. Transverse tubules |

3. The diagram below illustrates a small portion of a muscle myofibril. Match the term with the correct structure from the diagram.



- | | |
|--------------------------|--------------|
| _____ actin myofilament | _____ Z line |
| _____ myosin myofilament | _____ A band |
| _____ sarcomere | _____ I band |

4. Complete the following questions.

a. What causes calcium ions to enter the synaptic bulb?

b. What causes the vesicles to migrate to the membrane of the synaptic bulb?

c. What causes the motor end plate to depolarize?

d. What causes the release of calcium ions from the sarcoplasmic reticulum?

e. What causes the myosin heads to bind to actin?

f. What causes the release of ADP and P from the myosin heads?

g. What causes the myosin heads to change shape?

h. What causes the actin to be pulled toward the center of the sarcomere?

i. What causes the sarcomere to shorten?

j. What causes the cross bridges between myosin and actin to break?

k. What causes the sarcomere to return to its original shape?

5. List the three types of muscle tissue.

6. Provide a brief description of the following skeleton types.

Hydrostatic	
Exoskeleton	
Endoskeleton	

7. What are the functions of a skeleton?

8. Why is a skeleton necessary for movement?
