AP BIOLOGY
ANIMAL FORM & FUNCTION
ACTIVITY #8

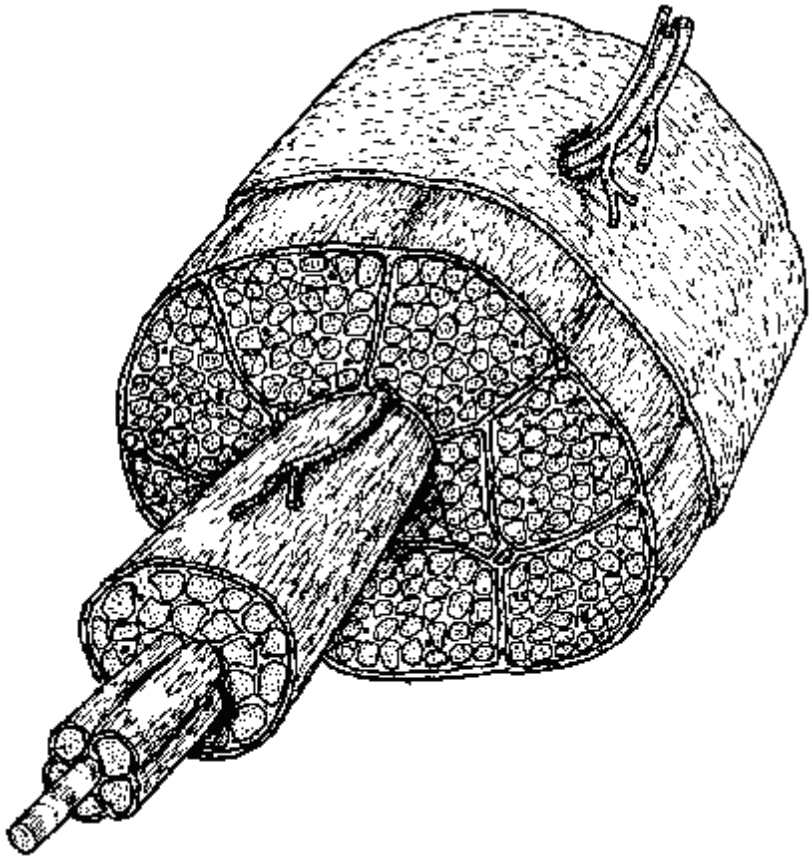
NAME_____

DATE_____HOUR_____

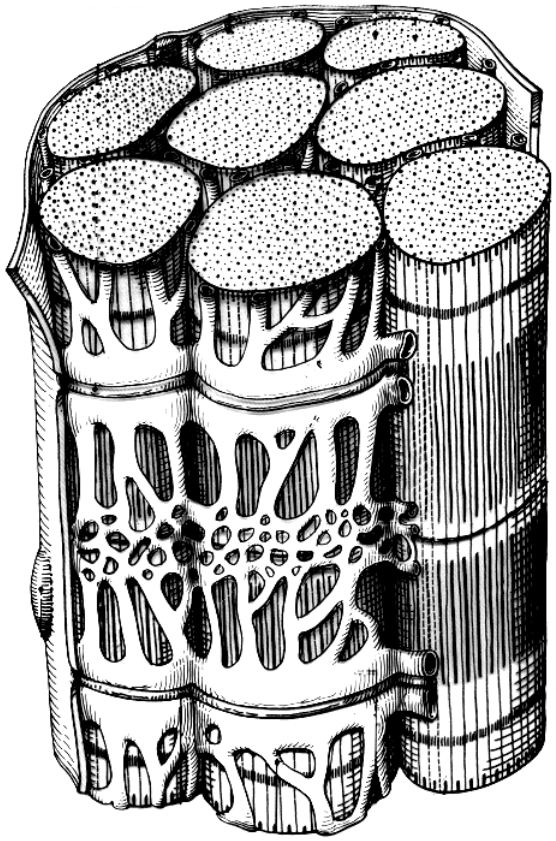
MOVEMENT & LOCOMOTION

PHYSIOLOGICAL PROPERTIES OF MUSCLE TISSUE

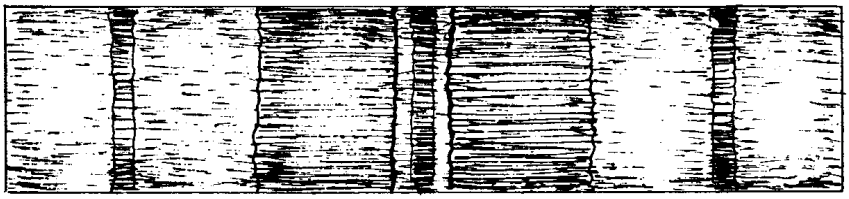
ORGANIZATION OF SKELETAL MUSCLE

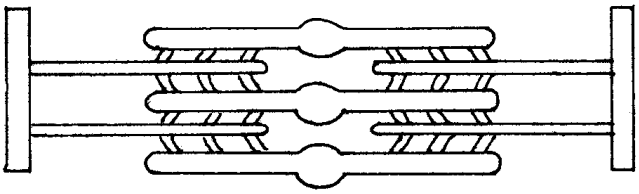


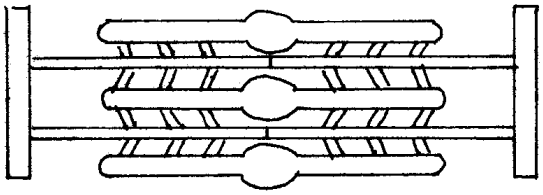
MUSCLE CELL SPECIALIZATION



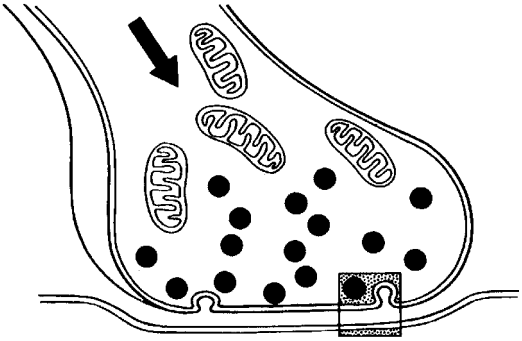
SARCOMERE

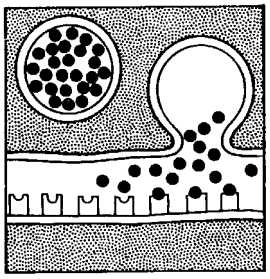


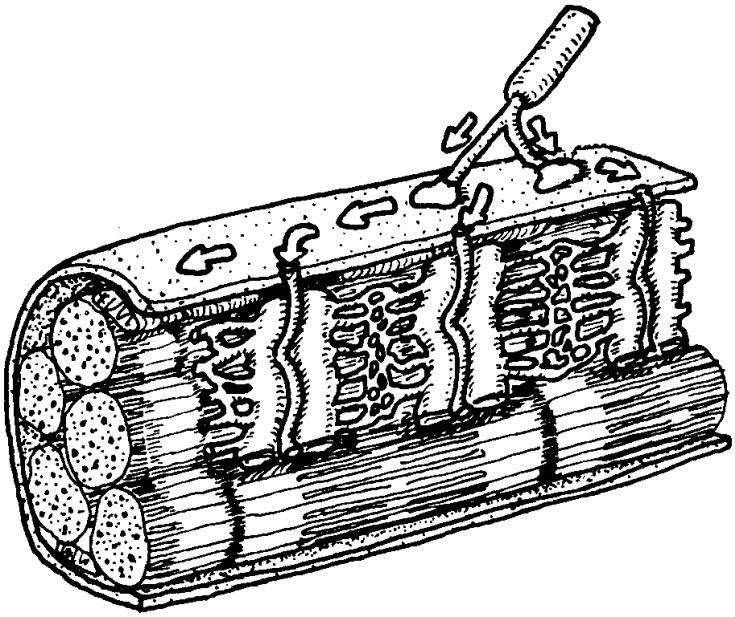


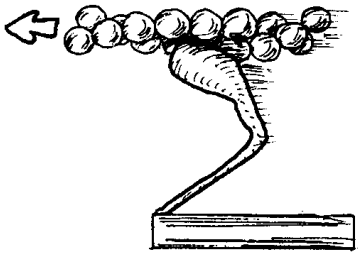


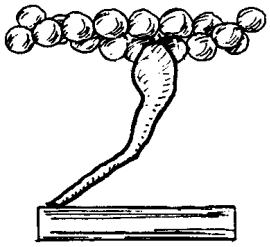
MUSCLE CONTRACTION

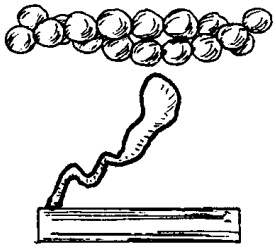












QUESTIONS

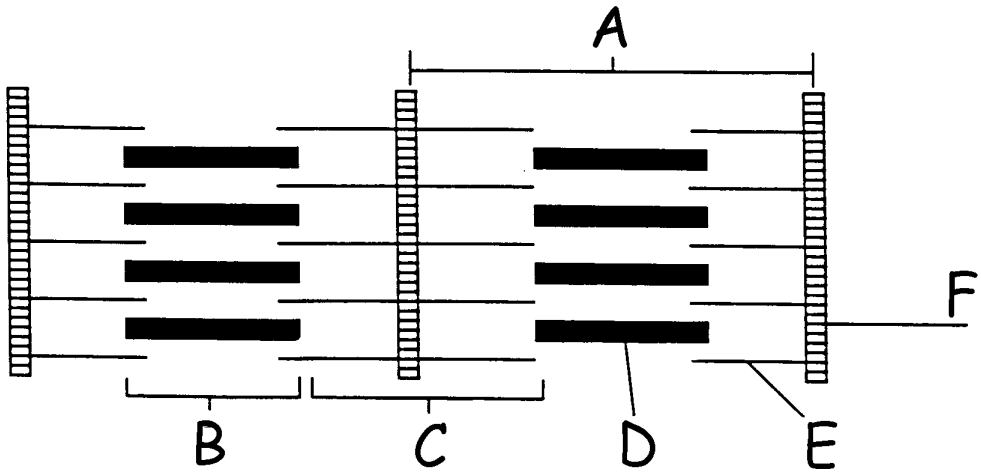
1. Match the structure with the correct description.

_____ 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

_____ myosin myofilament

_____ sarcomere

_____ Z line

_____ A band

_____ 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?

_____

_____