

①

Types of muscles "Skeletal"

1. location =
2. Appearance =
3. Control =
4. # nuclei =
5. Speed of contraction =

②

Types of muscles "Cardiac"

1. location =
2. Appearance =
3. Control =
4. # nuclei =
5. Speed of contraction =

③

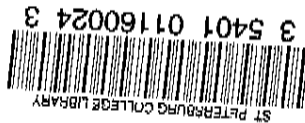
Types of muscles "Smooth"

1. location =
2. Appearance =
3. Control =
4. # of nuclei =
5. Speed of cont. =

④

ANS of Muscle

1. Produce _____ ie walking
2. _____ body position
3. Regulate _____ ie sphincters
4. _____ substances in the body
ie: blood & peristalsis
5. Produce _____ ie shivering/contractions



- 1. Movement
- 2. Stabilize
- 3. Organ Volume
- 4. Moving
- 5. Heat

- 1. Organs / blood vessels
- 2. Smooth
- 3. Involuntary
- 4. 1 = unmyelinated
- 5. Slow

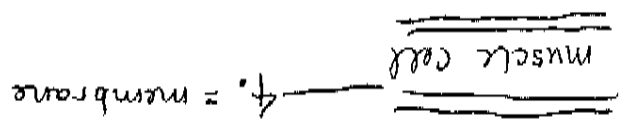
- ① Heart
- ② Striated
- ③ Involuntary
- ④ uni/bi 1 to 2
- ⑤ Moderate

- 1. Skeleton
- 2. Striated
- 3. Voluntary
- 4. Many - multinucleated
- 5. Fast

1085
Burgelman
p. 3-8
Skeletal muscle: connective tissue wrappings

1. _____ around whole muscle
2. _____ around fascicle
3. _____ around muscle cell (fiber)

Nerve & Blood Supply = Neuromuscular Junction



Microscopic Anatomy
1. Muscle Cell (Fiber)

8

- a. membrane =
 - b. conn. tis. =
 - c. _____ = T tubules
 - d. _____ w/ calcium
2. _____
 3. _____ = _____
 - a. (thin) _____
 - b. (thick) _____ w/ troponin/tropomyosin

1. _____ travels down _____
 2. _____ releases _____
 3. Ach crosses the _____ to the _____
 4. _____ travels to _____
 5. T-tubule shocks _____
 6. S.R. releases _____
 7. Calcium → _____
 8. Troponin pulls off _____
 9. _____ is left "naked"
 10. _____ attaches, pulls and releases w/ _____
- Contraction = sliding filament

9

0-11

1. muscle cell
- a. sarcolemma
- b. endomysium
- c. T-tubule
- d. sarcoplasmic Reticulum (S.R)
8. Myofibril
3. Myofilament = sarcomere
- A. Actin
- B. Myosin

1. Axon terminal of the motor neuron
2. synaptic vesicles
3. neurotransmitters
4. sarcolemma

1. nerve impulse, motor neuron
2. synaptic vesicle, Ach
3. synapse, sarcolemma
4. New Impulse, T-tubule
5. S.R.
6. Calcium
7. Troponin
8. Tropomyosin
9. Actin
10. Myosin, ATP

1. Epimysium
2. Perimysium
3. Endomysium

p. 4-8

1085 B. ...

CH
10-11

Muscle Twitch: Myogram (13)



5-8
CH.
10-11

1085 Biochemistry
Exam 2

1. _____ = enzyme
2. _____ → S.P

Relaxation p. 5-8 (10)

Muscle Metabolism (11)

1. _____ (few seconds)
2. _____ (15 sec)
3. _____ (30-40 sec) = Oxygen debt
4. _____ 10 min = 90%

Control of Muscle Tension (12)

1. _____ of stimulation
- a. _____ = $\frac{1}{2}$ = 2nd stimuli
- c. _____ = plateau = max contraction
- d. _____ = inability to contract
2. _____ use more motor units (vs. = _____ prevents fatigue)

A = latent period (= steps 1-9)
 B = contraction (= steps 10)
 C = relaxation (ACh E, Calcium → S.R.)

1. Frequency of Stimulation
 a. muscle twitch
 b. wave summation
 c. tetanus
 d. fatigue

2. Recruitment vs. asynchronously

1. Cellular levels
 2. Creatine phosphate
 3. Anaerobic - w/o oxygen
 4. Aerobic = w/ oxygen

1. ACh E
 2. Calcium → S.R.

Chapt. II

How Skeletal Muscle Produce Movement: Attachments

1. _____ attachment to bone that doesn't move.
2. _____ attachment to bone that moves.

p. 7-8 (14)

Chapt. II

How skeletal muscles produce

- Movement: Coordination w/in muscle groups.
1. _____ = agonist-main muscle
 2. _____ = opposit to muscle #1
 3. _____ = groups of muscles that work together

(15)

Chapt. II

Naming Skeletal Muscles

(16)

1. _____ rectus, oblique
2. _____ maximus, minimus
3. _____ deltoid, trapezoid, Rhomboid
4. _____ flexor, Abductor, dorsiflex
5. _____ biceps, triceps, quadr
6. _____ oculi, OIS, temporalis
7. _____ Sternocleid Mastoid

1. Direction
2. Size
3. Shape
4. Action
5. # of Origins
6. Location
7. Origin Insertion

3. Synurgist

8. Antagonist

1. Prime Mover

2. Insertion

1. Origin

p. 8-8

BSC
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CN
8-8

Properties of Muscle

5

1. _____ = produce an impulse (Action Potential)

2. _____ = generating tension

a. _____ = tension/effort < load

b. _____ = tension/effort > load

3 Extensibility (F_{POI})

4. Elasticity (F_{POI})

1. electrical excitability
2. Contractility
 - a. isometric
 - b. isotonic