

Anatomy & Physiology 2nd Semester Final Review

Muscles (pg 187-194)

1. Can you identify the components of a sarcomere (basic component of myofibril)– the muscle cell fibers at the cellular level? (actin, myosin, Z line, I band, H band, A band)
2. Can you explain how the proteins actin and myosin interact to make muscle contract?
3. Can you identify the muscles on the attached diagram?
4. Can you identify the steps in muscle contraction shown in the attached diagram 7.3?

Nervous System

5. Can you describe the general structure of the nervous system? (brain, spinal cord, nerves – what they are composed of [gray matter, white matter, nerve tracks], how they are related)
6. Can you describe and/or identify the structure of a neuron?
7. Can you briefly describe the transmission of a nerve impulse? (depolarization)
8. Can you briefly describe the transmission at a synapse?
9. Can you define a neurotransmitter?
10. Can you describe how addiction interferes with the reward system of the brain? (the VTA, amygdalae, nucleus accumbens and prefrontal cortex)
11. Can you describe how specific drugs can interfere with neural transmission? (cocaine, heroin, nicotine, alcohol, methamphetamine)
12. Can you explain a stroke?
13. Can you explain why the story of Phineas Gage was important to neuroscience?

Sight

14. Can you identify the structures of the eye and their function in relation to sight or light? (figure 9-10, pg 304)
 - i. sclera
 - ii. cornea
 - iii. aqueous humor
 - iv. iris
 - v. pupil
 - vi. lens
 - vii. vitreous humor
 - viii. retina
 - ix. blind spot
 - x. optic nerve
 - xi. fovea
 - xii. tapetum
15. Can you explain the differences between rods and cones and the significance of figure 9-12a and b (pg 307) and figure 9-19 (pg 313)
16. What is accommodation and how age affects it?
17. Can you explain the following eye conditions? (pg 310-311)
 - i. Legal blindness (see clinical note *Visual Acuity* pg 310)
 - ii. cataracts
 - iii. glaucoma
 - iv. myopia
 - v. hyperopia

Hearing & Equilibrium

18. Can you identify the following on a diagram? (figure 9-22, pg 315)
 - a. auricle
 - b. external ear canal (acoustic canal)
 - c. tympanic membrane (ear drum)
 - d. auditory ossicles (malleus, incus, stapes – figure 9-23, pg 316)
 - e. oval window
 - f. cochlea (cochlear duct, organ of Corti – figure 9-26, pg 321)
 - g. round window
 - h. semicircular canals
 - i. auditory tube
19. Can you explain the steps in the reception of sound and the process of hearing shown in figure 9-27 (pg 322)
20. Can you explain how conductive hearing loss and nerve deafness are different even though they both result in hearing loss?
21. Can you explain what deafblindness is?

Autopsy

22. Can you identify the basic steps taken during an autopsy?
 - i. Gross external examination
 - ii. Y-incision
 - iii. removal of ribs
 - iv. running the bowel
 - v. Rokitansky method of removing thoracic/abdominal organs (organ block)
 - vi. removal of brain (transverse cut)
 - vii. bread loaf method of examining organs
 - viii. histology & toxicology followup

Circulatory System

23. Can you identify the following on a diagram of the heart? (pg 392 & 394)
 - a. right atrium
 - b. left atrium
 - c. right ventricle
 - d. left ventricle
 - e. aorta
 - f. superior vena cava
 - g. inferior vena cava
 - h. pulmonary trunk artery
 - i. pulmonary veins
 - j. right atrioventricular valve (right av valve, tricuspid valve)
 - k. pulmonary semilunar valve
 - l. left atrioventricular valve (left av valve, bicuspid valve)
 - m. interventricular septum
24. Can you define cardiac arrhythmia and explain why it may be a problem?
25. Can you explain the diagram on pg 390 (an overview of cardiovascular system)
26. Can you explain what the following diseases are:
 - a. myocardial infarction
 - b. atherosclerosis

27. Can you describe the general steps in a heart bypass operation?

- a. angiogram
- b. retrieving bypass vein
- c. exposing the heart
- d. circumventing blood flow
- e. creating a bypass
- f. re-establishing blood flow
- g. finishing up

Respiratory System

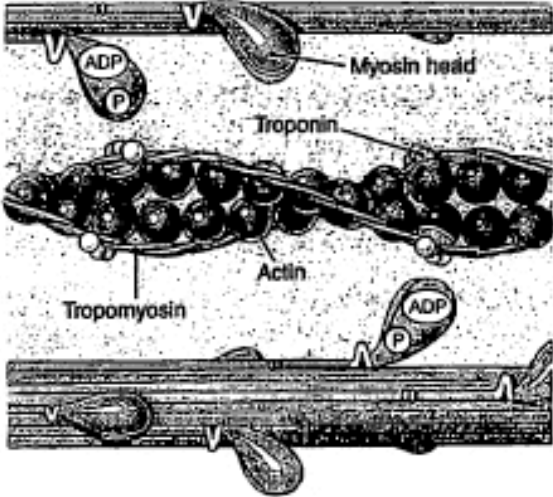
28. Can you identify the following on a diagram? (figure 15-1, pg 484)

- a. nasal cavity
- b. pharynx
- c. larynx
- d. epiglottis
- e. trachea
- f. bronchus
- g. bronchioles
- h. lung
- i. diaphragm

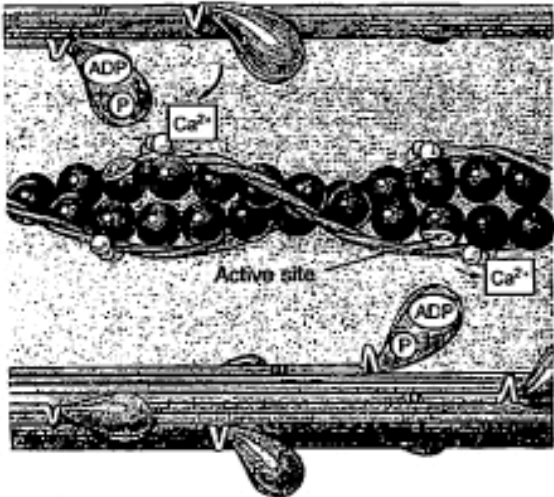
29. Can you explain what alveoli are and their role in respiration?

30. Can you explain the relationship between pressure and volume in the lungs and inhalation and exhalation as shown in figure 15-10 (pg 495)?

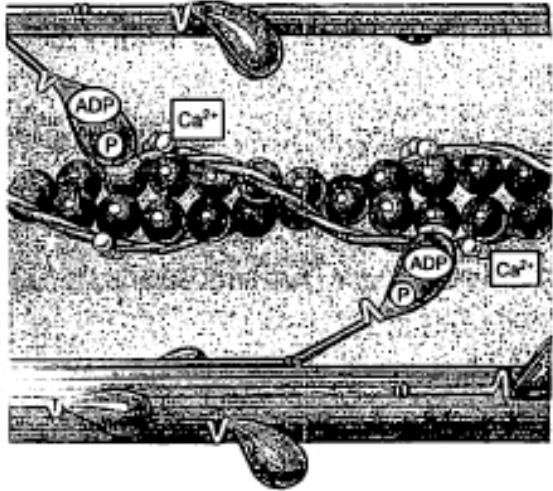
FIGURE 7-3 Summary of Contraction Process



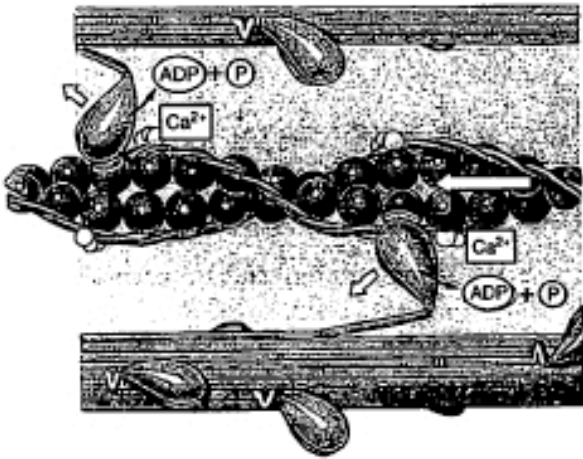
1. _____



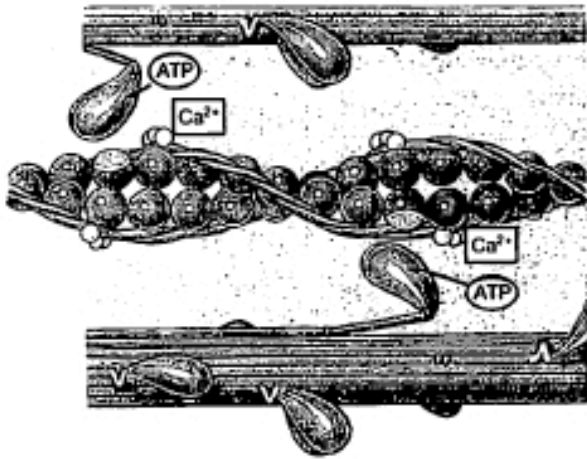
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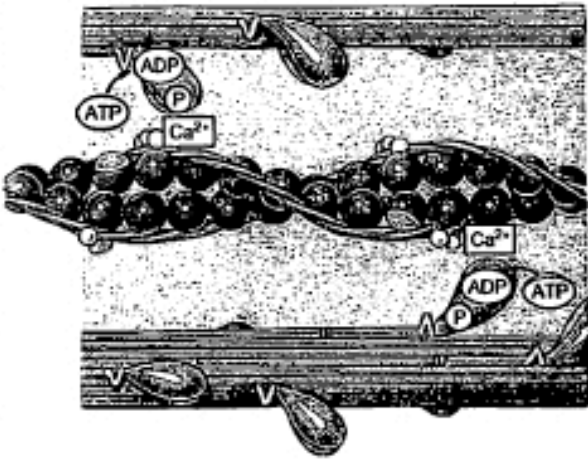
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4. _____



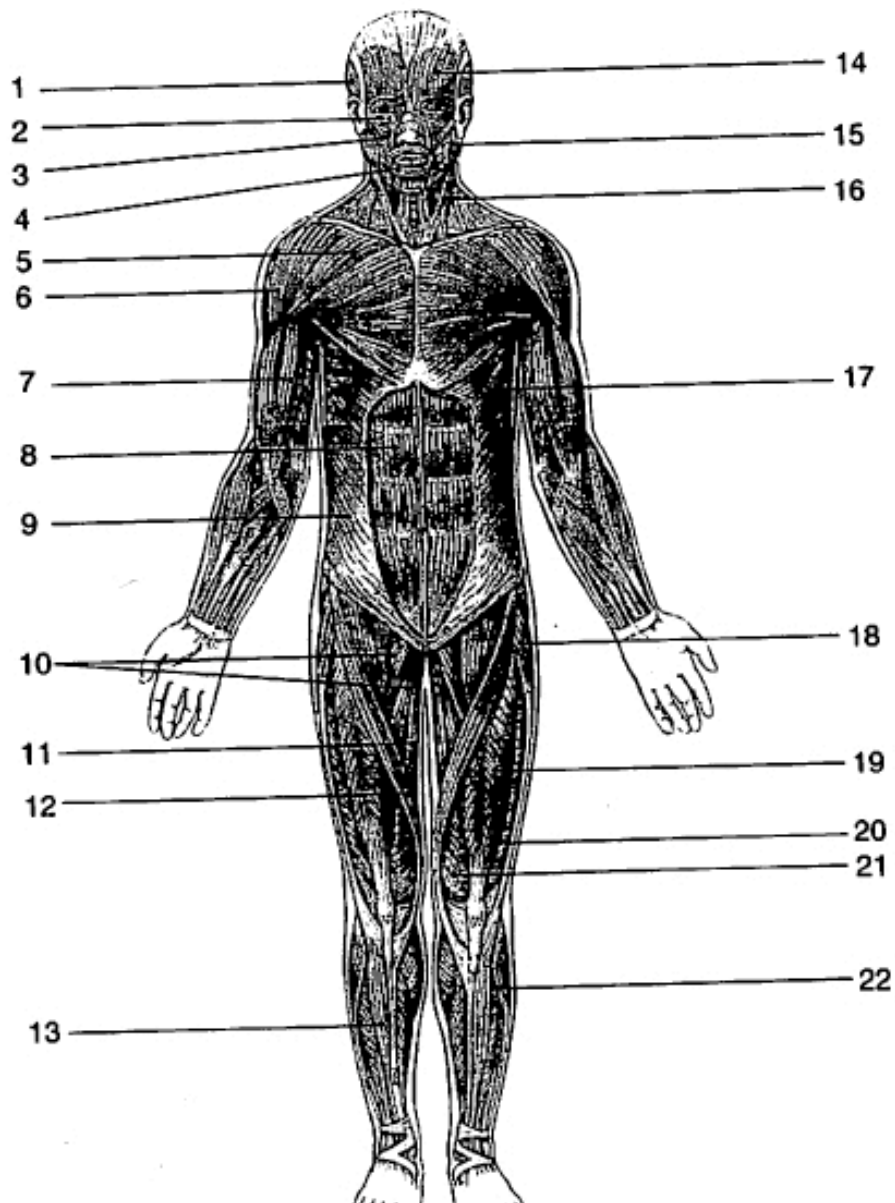
5. _____



6. _____

temporalis	rectus abdominis	orbicularis oris	tensor fascia lata
vastus medialis	tibialis anterior	external oblique	deltoid
gracilis	peroneus longus	transversus abdominis	vastus lateralis
rectus femoris	sartorius	zygomaticus	pectoralis major
masseter	biceps brachii	orbicularis oculi	
sternocleidomastoid	adductor muscles	frontalis	

FIGURE 7-4 Principal Skeletal Muscles—Anterior View



Identify the following muscles on _____

soleus
deltoid
occipitalis
trapezius
gluteus medius

gluteus maximus
external oblique
biceps femoris
triceps brachii

semimembranosus
gastrocnemius
semitendinosus
latissimus dorsi

FIGURE 7-5 Principal Skeletal Muscles—Posterior View

