

Name _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

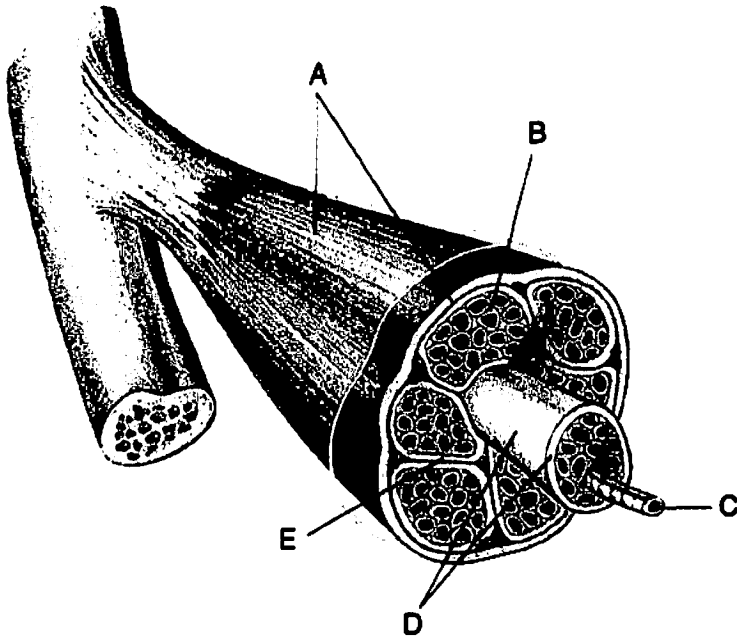


Figure 9.1

Using Figure 9.1, match the following:

1) Endomysium.

1) _____

2) Fascicle.

2) _____

3) The tissue that binds muscles into functional groups.

3) _____

4) Perimysium.

4) _____

5) Muscle fiber.

5) _____

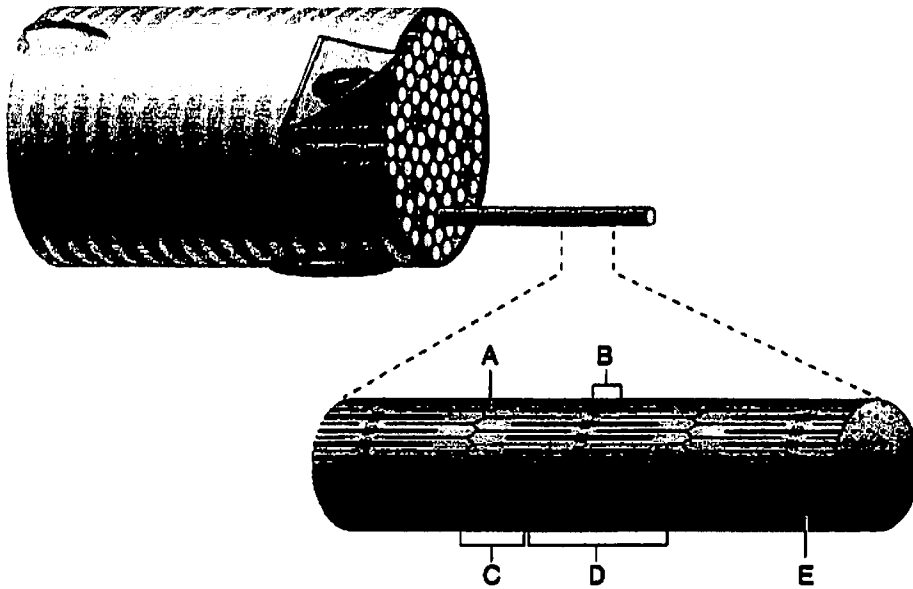


Figure 9.2

Using Figure 9.2, match the following:

- | | |
|------------|-------|
| 6) I band. | _____ |
| 7) H zone. | _____ |
| 8) A band. | _____ |
| 9) Z disc. | _____ |
| 10) M line | _____ |

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 11) With muscular dystrophy _____. 11) _____
- A) muscles decrease in size due to loss of fat and connective tissue
 - B) muscle fibers degenerate and atrophy
 - C) most cases appear in young females
 - D) most forms do not appear to be inherited

- 12) Fatigued muscle cells that recover rapidly are the products of _____. 12) _____
- A) slow exercise of short duration
 - B) slow exercise of long duration
 - C) intense exercise of long duration
 - D) intense exercise of short duration

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

21) The end of the muscle that typically moves when a muscle contracts is called the _____ 21) _____

22) Only _____ muscle cells commonly branch. 22) _____

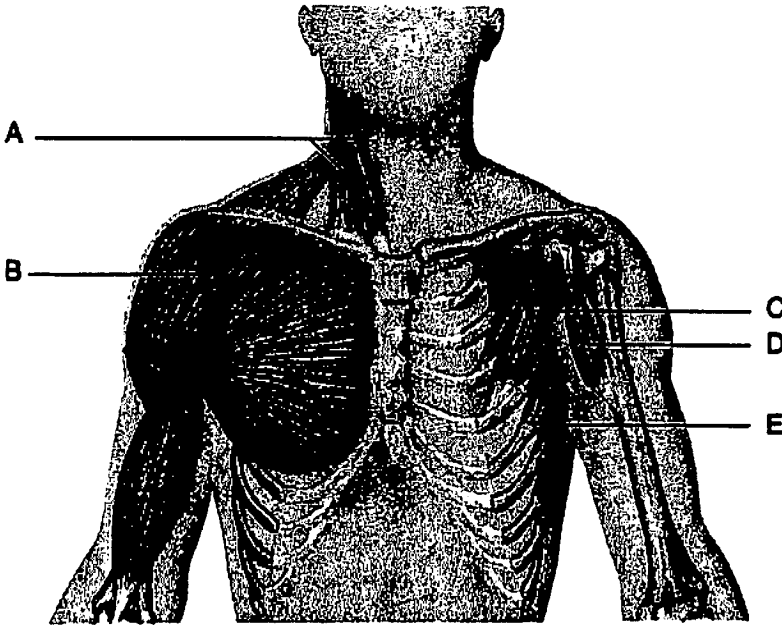


Figure 10.2

Using Figure 10.2, match the following:

23) Arm abduction and rotation. 23) _____

24) A muscle that has its origin on the manubrium of the sternum and medial portion of the clavicle, and its insertion in the mastoid process of the temporal bone. 24) _____

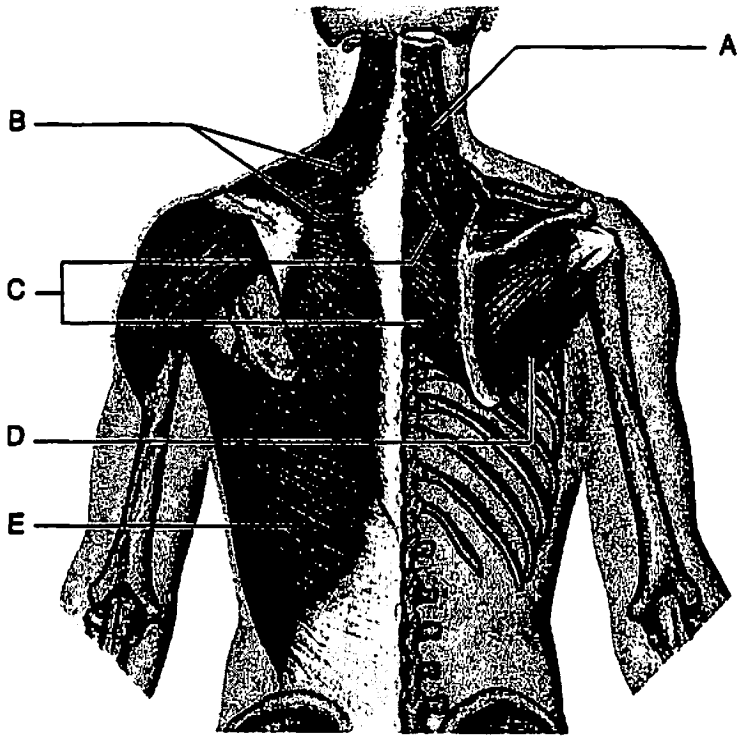


Figure 10.3

Using Figure 10.3, match the following:

- | | |
|---|-----------|
| 25) Trapezius muscle. | 25) _____ |
| 26) The latissimus dorsi. | 26) _____ |
| 27) Rotates scapula. | 27) _____ |
| 28) _____ is a powerful forearm extensor. | 28) _____ |
| 29) _____ is the main chewing muscle. | 29) _____ |
| 30) The pectoralis major has a _____ arrangement of fascicles. | 30) _____ |
| 31) The quadriceps femoris is composed of three "vastus" muscles and the _____. | 31) _____ |
| 32) _____ is a synergist of the latissimus dorsi; it extends, medially rotates, and adducts the humerus. | 32) _____ |
| 33) Bodybuilders are known for their "great quads." Describe the quadriceps muscles. | 33) _____ |
| 34) A woman mentions to her friend that another person on the beach has "great abs." What is she talking about? | 34) _____ |
| 35) How does an antagonist differ from a prime mover? How is it the same? | 35) _____ |

36) A wide receiver for the Dallas Cowboys pulled a hamstring muscle. What muscles could be affected and what would the effect be? 36) _____

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

37) Brian decided to enter a 5-mile race designed to raise money for a class trip. He did not do any preconditioning, nor has he ever jogged before. The morning after the race, Brian had so much pain in both his legs, he was unable to go to school. What caused this pain?

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

38) Normal development of the immune response is due in part to hormones produced by the _____ 38) _____

- A) thymus gland
- B) adrenal medulla
- C) thyroid gland
- D) pancreas

39) Chemical substances secreted by cells into the extracellular fluids that regulate the metabolic function of other cells in the body are called _____. 39) _____

- A) proteins
- B) enzymes
- C) hormones
- D) antibodies

40) Growth hormone _____. 40) _____

- A) is regulated by humoral mechanisms
- B) promotes long bone growth during the formative years
- C) secretion results in a decrease in muscle mass
- D) is also called somatostatin

41) Gonadocorticoid(s) _____. 41) _____

- A) synthesized by the adrenal medulla are primarily androgens
- B) production by the adrenal gland is insignificant compared with sex hormone release from the gonads during late puberty
- C) hypersecretion can result in adrenogenital syndrome, also called feminization
- D) secretion inhibition is highly dependent on a negative feedback loop involving ACTH

42) Thyroid hormone exerts its influence by _____. 42) _____

- A) exerting only a minor effect on body metabolism
- B) acting to decrease basal metabolic rate
- C) entering some cells and binding to intracellular receptors within the nuclei
- D) causing a reduction in the number of blood vessel adrenergic receptors, and therefore decreasing blood pressure

43) The ability of a specific tissue or organ to respond to the presence of a hormone is dependent on _____. 43) _____

- A) the location of the tissue or organ with respect to the circulatory path
- B) nothing—all hormones of the human body are able to stimulate any and all cell types because hormones are powerful and nonspecific
- C) the presence of the appropriate receptors on the cells of the target tissue or organ
- D) the membrane potential of the cells of the target organ

44) Insulin, a small (51-amino-acid) protein, is synthesized by the beta cells of the pancreas. This hormone is released _____. 44) _____
A) in excessive amounts in obese people
B) when the body's glucose level drops
C) when the body's glucose level rises
D) in response to severe physical stress (i.e., a ten-mile run)

45) When it becomes necessary to enlist the fight-or-flight response, a hormone that is released during the alarm phase of the general adaptation syndrome is _____. 45) _____
A) angiotensinogen
B) estrogen
C) epinephrine
D) renin

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

46) A 25-year-old male was admitted to the medical/surgical unit with a blood glucose of 600 mg/dl. On assessment, the nurse observed his breathing was deep and rapid, and his breath smelled of acetone. His face was flushed and his skin was dry. His pH was low. Describe the physiological response that is occurring.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

47) Air and food are routed into the proper channels by the _____. 47) _____
A) pharynx
B) trachea
C) larynx
D) carina

48) For gas exchange to be efficient, the respiratory membrane must be _____. 48) _____
A) between 5 and 6 micrometers thick
B) at least 3 micrometers thick
C) 0.5 to 1 micrometer thick
D) The thickness of the respiratory membrane is not important in the efficiency of gas exchange

49) The most powerful respiratory stimulus for breathing in a healthy person is _____. 49) _____
A) pH (alkalosis)
B) increase of carbon dioxide
C) pH (acidosis)
D) loss of oxygen in tissues

50) Which of the following does *not* influence the increase in ventilation that occurs as exercise is initiated? 50) _____
A) psychic stimuli
B) simultaneous cortical motor activation of the skeletal muscles and respiratory center
C) proprioceptors
D) decrease in lactic acid levels

51) Tidal volume is air _____. 51) _____
A) forcibly expelled after normal expiration
B) inhaled after normal inspiration
C) exchanged during normal breathing
D) remaining in the lungs after forced expiration

- 52) Which statement about CO₂ is incorrect? 52) _____
 A) More CO₂ dissolves in the blood plasma than is carried in the RBCs.
 B) Its concentration in the blood is decreased by hyperventilation.
 C) Its accumulation in the blood is associated with a decrease in pH.
 D) CO₂ concentrations are greater in venous blood than arterial blood.
- 53) Which respiratory-associated muscles would contract if you were to blow up a balloon? 53) _____
 A) diaphragm contracts, internal intercostals would relax
 B) external intercostals would contract and diaphragm would relax
 C) internal intercostals and abdominal muscles would contract
 D) diaphragm would contract, external intercostals would relax
- 54) Which of the following provide the greatest surface area for gas exchange? 54) _____
 A) alveoli
 B) respiratory bronchioles
 C) alveolar sacs
 D) alveolar ducts
- 55) Select the correct statement about oxygen transport in blood: 55) _____
 A) During conditions of acidosis, hemoglobin is able to carry oxygen more efficiently
 B) A 50% oxygen saturation level of blood returning to the lungs might indicate an activity level higher than normal
 C) Increased BPG levels in the red blood cells enhance oxygen-carrying capacity
 D) During normal activity, a molecule of hemoglobin returning to the lungs carries one molecule of O₂

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

- 56) While dining out in a restaurant a man suddenly chokes on a piece of meat. The waitress is also a student nurse and comes to the man's aid. She asks him if he can talk. The man responds by shaking his head no and grabbing at his neck. What is the significance of the man's inability to talk?

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 57) Oxygen and carbon dioxide are exchanged in the lungs and through all cell membranes by _____ 57) _____
 A) filtration
 B) active transport
 C) osmosis
 D) diffusion
- 58) Select the correct statement about the pharynx. 58) _____
 A) The pharyngeal tonsil is located in the laryngopharynx.
 B) The laryngopharynx blends posteriorly into the nasopharynx.
 C) The palatine tonsils are embedded in the lateral walls of the nasopharynx.
 D) The auditory tube drains into the nasopharynx.
- 59) The ideal vital capacity of an individual is around _____. 59) _____
 A) 6600 ml
 B) 1200 ml
 C) 4800 ml
 D) 3100 ml

- 60) The loudness of a person's voice depends on _____. 60) _____
- A) the strength of the intrinsic laryngeal muscles
 - B) the length of the vocal folds
 - C) the force with which air rushes across the vocal folds
 - D) the thickness of vestibular folds
- 61) The walls of the alveoli are composed of two types of cells, type I and type II. The function of type II is _____. 61) _____
- A) to replace mucus in the alveoli
 - B) to trap dust and other debris
 - C) to secrete surfactant
 - D) to protect the lungs from bacterial invasion
- 62) After the segmental (tertiary) bronchus, the next smaller branch of the respiratory passageway is (are) the _____. 62) _____
- A) alveolar ducts
 - B) atrium
 - C) respiratory bronchiole
 - D) terminal bronchioles