Chapter 11 – Respiratory System

1. If the esophagus and trachea were separate in humans, which of the following would not be needed?

a. swallowing **b.** a nose

c. an epiglottis **d.** a diaphragm

e. All of these are correct.

2. Inhaled air passes through which of the following structures last?

a. bronchus **b.** trachea

c. pharynx **d.** bronchiole

e. larynx

3. With respect to a counter-current exchange mechanism, which of the following statements is true?

a. Blood and water fl ow in opposite directions.

b. The diffusion gradient of oxygen remains high.

c. Oxygen diff uses along a concentration gradient.

d. This mechanism is used in some aquatic organisms.

e. All of these are correct.

4. Two muscular structures control air pressure inside the lungs. Changes in air pressure cause air to move into and out of the lungs. Inhalation is a result of the

a. contraction of the diaphragm and pleural membranes

b. contraction of the diaphragm and intercostal muscles

c. relaxation of the diaphragm and intercostal muscles

d. relaxation of the diaphragm and pleural membranes

e. relaxation of the diaphragm and contraction of the intercostal muscles

5. Which of the following disorders can be the result of smoking?

a. stomach cancer **b.** emphysema

c. cancer of the oral cavity **d.** chronic bronchitis

e. All of these are correct.

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6. Which of the following is a technique or a piece of technology that is used in treating lung cancer?

a. spiral scanning **b.** MRI scan

c. laser surgery **d.** CT scan

e. two-photon microscopy

7. Th e voice box is made of cartilage and is responsible for the production of sound, as well as the manipulation of pitch and volume. Th e voice box is also known as the

a. glottis **b.** pharynx

c. epiglottis **d.** trachea

e. larynx

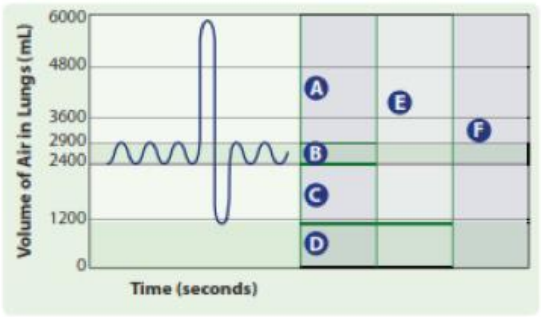
8. Two thin membranes surround the lungs. What are these membranes called?

a. pericardial membranes **b.** pleural membranes

c. meninges **d.** capsules

e. cilia

9. Identify A to F and explain what this spirograph represents.



A _____

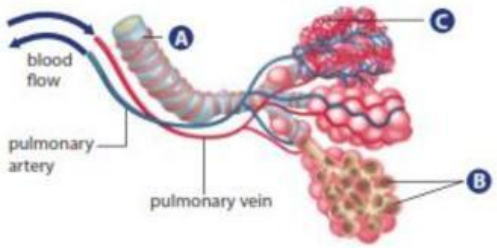
B_____

C_____

D_____

E_____

10. Chose the correct statement with the diagram.



A _____

B_____

C_____

11. The main reason why terrestrial animals need to use lungs rather than gills for gas exchange is

a. mammals need more O_2 than gills can provide.

b. gills do not have enough surface area for gas exchange.

c. air has a higher O_2 content than water.

d. gills are not as efficient as lungs.

e. gills need an aquatic environment to function.

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12. All terrestrial vertebrates—except amphibians— breathe by expanding their lungs, thereby creating.

a. negative pressure within the lungs

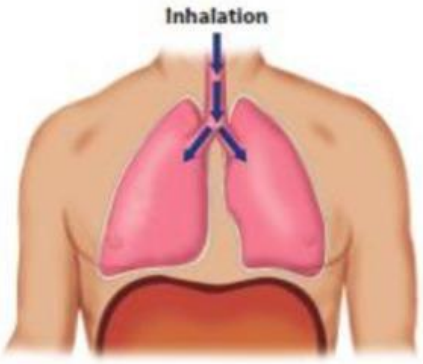
b. positive pressure within the lungs

c. neutral pressure within the lungs

d. counter-current pressure within the lungs

e. directional pressure within the lungs

Refer to this diagram to answer the question below.



13. What is the condition of the intercostal muscles and diaphragm during inhalation?

a. intercostal muscles contract and diaphragm moves up.

b. intercostal muscles relax, and diaphragm moves down.

c. intercostal muscles relax, and diaphragm moves up.

d. intercostal muscles contract and diaphragm moves down.

e. intercostal muscles relax, and diaphragm does not move.

14. Complete the following statement by choosing the correct pair of terms below. The diaphragm is a _____ shaped layer of _____ that separates the thoracic cavity from the abdominal cavity.

a. heart, cartilage

b. dome, cartilage

c. triangular, muscle

d. dome, muscle

e. triangular, cartilage

15. The throat is part of the neck that lies in front of the vertebral column. It is a common passageway for air, food, and water. What is another term for this common passageway?

a. larynx

b. epiglottis

c. pharynx

d. esophagus

e. glottis

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16. Most oxygen is carried by the blood. Most carbon dioxide is transported by the blood .

a. bound to hemoglobin, bound to protein.

b. dissolved in plasma, dissolved in plasma.

c. bound to hemoglobin, dissolved in blood fluids.

d. dissolved in plasma, bound to hemoglobin.

e. bound to hemoglobin, bound to hemoglobin.

17. Complete the following statement by choosing the correct pair of terms below. The trachea is reinforced by rings, which prevent it from.

a. muscular, collapsing.

b. bony, inflating

c. epithelial, inflating

d. cartilaginous, collapsing.

e. epithelial, collapsing.

18. Complete the following statement by choosing the correct pair of terms below. The blood in capillaries has a(n) concentration of CO_2 relative to the alveoli because it is body tissues.

a. higher, going to

b. lower, returning from

c. higher, returning from

d. lower, going to

e. unchanged, going to

19. Which of the following helps in the transportation of oxygen in humans?

a. hemoglobin

b. melanin

c. keratin

d. urea

e. bicarbonate ion

20. Complete the following statement by choosing the correct pair of terms below. During internal respiration, oxygen diff uses from the into the.

a. oxygen-rich tissues, blood

b. blood, oxygen-poor tissues

c. oxygen-poor tissues, blood

d. air, oxygen-poor tissues

e. air, oxygen-rich tissues

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