

CH. 15 - RESPIRATORY SYSTEM
PRACTICE QUESTIONS

31. The pleural membranes surround
- A. the lungs.
 - B. the trachea.
 - C. each alveolus.
 - D. the diaphragm.
32. Where does external respiration occur?
- A. larynx
 - B. alveoli
 - C. trachea
 - D. bronchi
33. During the expiration of air, the diaphragm moves
- A. up, resulting in a decrease in pressure in the thoracic cavity.
 - B. up, resulting in an increase in pressure in the thoracic cavity.
 - C. down, resulting in a decrease in pressure in the thoracic cavity.
 - D. down, resulting in an increase in pressure in the thoracic cavity.
34. As the blood becomes more acidic in muscle tissues, hemoglobin will carry less
- A. oxygen.
 - B. hydrogen ion.
 - C. carbon dioxide.
 - D. bicarbonate ion.
35. The formation of carbaminohemoglobin occurs in the
- A. veins.
 - B. arteries.
 - C. arterioles.
 - D. capillaries.
38. Inhalation is caused by
- A. the diaphragm moving up and the ribs moving in.
 - B. the diaphragm moving up and the ribs moving out.
 - C. the diaphragm moving down and the ribs moving in.
 - D. the diaphragm moving down and the ribs moving out.

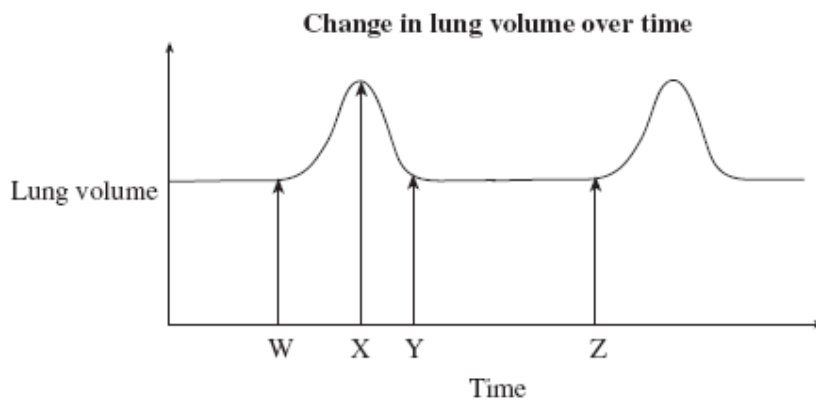
29. Cilia in the trachea sweep debris toward which of the following structures?
- A. the alveoli
 - B. the bronchi
 - C. the pharynx
 - D. the bronchioles
30. What structure, composed of thin-walled epithelial cells that secrete lipoproteins, allows the diffusion of gases?
- A. the alveolus
 - B. the bronchiole
 - C. the diaphragm
 - D. the pleural membrane
31. Which of the following occurs during exhalation?
- A. The diaphragm flattens.
 - B. The rib muscles contract.
 - C. Air pressure increases in the lungs.
 - D. The thoracic cavity increases in volume.
45. Which structure has rings of cartilage?
- A. the trachea
 - B. the epiglottis
 - C. the diaphragm
 - D. the bronchioles
33. If the hydrogen ion concentration in the blood increases, the breathing control centre in the brain will
- A. decrease thoracic cavity volume.
 - B. decrease rib muscle contractions.
 - C. increase contractions of the diaphragm.
 - D. increase pressure in the thoracic cavity.
40. The exchange of oxygen and carbon dioxide in external respiration occurs by
- A. osmosis.
 - B. diffusion.
 - C. active transport.
 - D. facilitated diffusion.

9. a) Compare the pH and temperature of the blood in the lung capillaries with the blood in the capillaries of other body tissues. **(2 marks)**

- b) How does the pH and temperature of the blood in the body tissues affect the ability of oxygen to bind to hemoglobin? **(1 mark)**

- c) How would the conditions of the blood in the body tissues change during strenuous exercise? **(2 marks)**

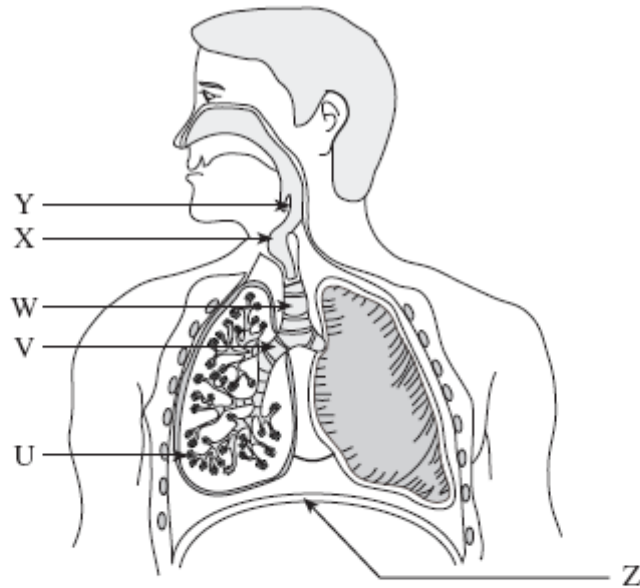
Use the following graph to answer question 44.



44. When does the diaphragm contract during breathing?

- A. W → X
- B. X → Z
- C. X → Y
- D. Y → Z

Use the following diagram to answer questions 45, 46 and 47.



45. In which area do voice sounds originate?

- A. V
- B. W
- C. X
- D. Y

46. What is the structure labelled **W**?

- A. the larynx
- B. the alveoli
- C. the trachea
- D. the bronchi

47. What structure prevents food from entering the respiratory system?

- A. U
- B. X
- C. Y
- D. Z

4. Explain **three** ways in which the alveoli are well suited to their function. **(3 marks)**

7. a) Describe internal respiration. **(3 marks)**

41. Which of the following reactions occurs in a capillary of the leg?

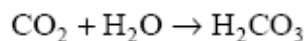
- A. $\text{Hb} + \text{H}^+ \rightarrow \text{HHb}$
- B. $\text{HbCO}_2 \rightarrow \text{Hb} + \text{CO}_2$
- C. $\text{Hb} + \text{oxygen} \rightarrow \text{HbO}_2$
- D. $\text{H}^+ + \text{HCO}_3^- \rightarrow \text{H}_2\text{CO}_3$

45. What structure closes the trachea when a person swallows?
- A. the glottis
 - B. the larynx
 - C. the pharynx
 - D. the epiglottis
46. Which of the following occurs during inhalation?
- A. The intercostal muscles relax and the diaphragm relaxes.
 - B. The intercostal muscles relax and the diaphragm contracts.
 - C. The intercostal muscles contract and the diaphragm relaxes.
 - D. The intercostal muscles contract and the diaphragm contracts.
47. What part of the brain controls inhalation?
- A. the cerebrum
 - B. the cerebellum
 - C. the corpus callosum
 - D. the medulla oblongata
48. Which of the following decreases as carbon dioxide enters the blood during internal respiration?
- A. water
 - B. hydrogen ions
 - C. bicarbonate ions
 - D. reduced hemoglobin

32. Alveoli would **not** be characterized as

- A. muscular.
- B. thin-walled.
- C. vascularized.
- D. secreting a lipoprotein.

33. Consider the following reaction:



An enzyme found in red blood cells that catalyzes this reaction is

- A. nuclease.
- B. peptidase.
- C. dehydrogenase.
- D. carbonic anhydrase.