

The Human Respiratory System Practice Test

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Multiple Choice (20 Questions):

Instructions: Choose the most accurate answer.

1. Which of the following is a function of the conducting zone?
 - A. Gas exchange.
 - B. Warming, cleansing, and humidifying air.
 - C. Oxygen transport to tissues.
 - D. Producing surfactant.
2. What structure prevents food from entering the larynx during swallowing?
 - A. Trachea.
 - B. Epiglottis.
 - C. Pharynx.
 - D. Bronchiole.
3. Which of the following contains the vocal cords?
 - A. Nasopharynx.
 - B. Larynx.
 - C. Trachea.
 - D. Bronchi.
4. Air moves from the pharynx to the trachea through which structure?
 - A. Larynx.
 - B. Bronchioles.
 - C. Alveoli.
 - D. Glottis.
5. Which of the following is true about the right lung?
 - A. It has 2 lobes.
 - B. It has 3 lobes.
 - C. It is smaller than the left lung.
 - D. It contains only one fissure.
6. Which structure is lined with ciliated mucus to trap dust and bacteria?
 - A. Alveoli.
 - B. Trachea.
 - C. Bronchioles.
 - D. Larynx.
7. Gas exchange occurs primarily at the:
 - A. Bronchi.
 - B. Alveoli.
 - C. Pharynx.
 - D. Larynx.

8. The exchange of gases between blood and tissue cells is called:
 - A. Internal respiration.
 - B. External respiration.
 - C. Pulmonary ventilation.
 - D. Surfactant secretion.
9. What is the primary carrier of oxygen in the blood?
 - A. Plasma.
 - B. Hemoglobin in red blood cells.
 - C. Bicarbonate ions.
 - D. Alveolar fluid.
10. Carbon dioxide is mostly transported in the blood as:
 - A. Dissolved gas.
 - B. Bound to hemoglobin.
 - C. Bicarbonate ions.
 - D. Oxygen.
11. Which volume represents air forcibly inhaled beyond tidal volume?
 - A. Tidal volume.
 - B. Inspiratory reserve volume.
 - C. Expiratory reserve volume.
 - D. Residual volume.
12. How much air remains in the lungs after maximal exhalation?
 - A. Tidal volume.
 - B. Inspiratory reserve volume.
 - C. Residual volume.
 - D. Vital capacity.
13. The fatty molecule produced by cuboidal alveolar cells that prevents alveolar collapse is called:
 - A. Surfactant.
 - B. Bicarbonate.
 - C. Mucus.
 - D. Hemoglobin.
14. Which organ is the primary site of external respiration?
 - A. Bronchi.
 - B. Alveoli.
 - C. Pharynx.
 - D. Bronchioles.
15. Normal breathing rate in a healthy adult is approximately:
 - A. 6–10 breaths per minute.
 - B. 12–18 breaths per minute.
 - C. 20–25 breaths per minute.

- D. 30–35 breaths per minute.
16. Chemoreceptors that detect CO₂ levels are located in the:
- A. Lungs.
 - B. Carotid and aorta arteries.
 - C. Medulla.
 - D. Pleura.
17. Which disorder is caused by fibrosis enlarging alveoli and decreasing surface area?
- A. Chronic bronchitis.
 - B. Emphysema.
 - C. Cystic fibrosis.
 - D. Tuberculosis.
18. Which of the following is true regarding pleura?
- A. Parietal pleura surrounds the lungs.
 - B. Visceral pleura lines the thoracic cavity.
 - C. Pleural fluid reduces friction between pleura layers.
 - D. There is no fluid between pleura layers.
19. Forced expiration is typically observed in which conditions?
- A. Apnea and hypoventilation.
 - B. Asthma, chronic bronchitis, pneumonia.
 - C. Eupnea and hyperventilation.
 - D. SIDS and CO poisoning.
20. The pharynx is approximately:
- A. 2 inches long.
 - B. 3 inches long
 - C. 5 inches long.
 - D. 7 inches long.

Part B: Short Answer (5 Questions):

Instructions: Provide concise but complete answers.

1. Trace the complete pathway of air from the external nares to the alveoli, including all major structures and subdivisions of the respiratory tract.
2. Explain the difference between internal and external respiration and identify the locations where each process occurs.
3. Describe the roles of the diaphragm and intercostal muscles during inhalation and exhalation, including how changes in thoracic volume and pressure facilitate breathing.
4. Define tidal volume, inspiratory reserve volume, expiratory reserve volume, residual volume, and vital capacity. Include approximate volumes for each in a healthy adult.
5. Describe how oxygen and carbon dioxide are transported in the blood, including the forms they take and the mechanisms involved in their movement between the alveoli, blood, and tissues.