

Unit L

For this section, you must have all the structures and functions of the Respiratory System understood. Below are some questions of L.O. L – 1 that can help you.

L.O. L – 1 Respiratory Structures

- ___ 1. What is the structure that closes off the glottis when food is swallowed?
- ___ 2. Another name for the voice box is called?
- ___ 3. Why do the trachea contain rings of cartilage?
- ___ 4. Each lung is served by a branch of the trachea called a(n)?
- ___ 5. The small tubes that branch all over the lungs are called?
- ___ 6. Eventually the arterioles end in small air sacs called?
- ___ 7. The strong horizontal muscle at the bottom of the thoracic cavity is called the?
- ___ 8. Give the function of the pleural membranes?

L.O. L – 2 Cilia and Mucus

- ___ 1. What three ways is air conditioned before it reaches the lungs?
- ___ 2. What is the function of cilia in the throat?
- ___ 3. How is the air warmed?
- ___ 4. What do we mean when we say that air is 99.5% saturated by the time it reaches the lungs?
- ___ 5. What substance traps lung debris?
- ___ 6. What happens to the debris after it is trapped?
- ___ 7. What is the function of the hairs in the nose?

L.O. L – 3 Alveoli

- ___ 1. What are alveoli made up of?
- ___ 2. What is the function of the capillaries surrounding the alveoli?
- ___ 3. How many alveoli are found in a human lung?
- ___ 4. What substance keeps the alveoli from collapsing and sticking together?
- ___ 5. What happens to oxygen after it has undergone diffusion?
- ___ 6. What happens to carbon dioxide after it has undergone diffusion?
- ___ 7. How thick are the walls of the alveoli?

L.O. L – 4 Inhalation and Exhalation

- ___ 1. What does the Respiratory System supply that is necessary for us?
- ___ 2. What substances are removed by the respiratory system?
- ___ 3. Why do humans require oxygen?
- ___ 4. Name the processes that make up the respiratory system.

- ___ 5. What is the process called in which air is taken into the lungs?
- ___ 6. What is the process of expelling air from the lungs called?
- ___ 7. Internal respiration is the process where air is exchanged between the blood and the?
- ___ 8. Define external respiration.
- ___ 9. What is produced by the process of cellular respiration?
- ___ 10. What is the breathing center?
- ___ 11. What stimulates the breathing center to send a nerve impulse?
- ___ 12. Where does the nerve impulse go to?
- ___ 13. The diaphragm will contract (flatten) and the ribs will rise to create what?
- ___ 14. Why is it said that we breathe by Negative Pressure?
- ___ 15. Do the lungs have muscles?
- ___ 16. What structure in the alveoli notify the Medulla Oblongata to stop sending messages?
- ___ 17. What forces air out of the lungs?

L.O. L – 5 Lungs, Pleural Membranes, Ribs, and Diaphragm

- ___ 1. The sides and the top of the chest cavity is surrounded by?
- ___ 2. What makes up the floor of the chest cavity?
- ___ 3. What stimulates us to breathe?
- ___ 4. What is the normal shape of the diaphragm?
- ___ 5. What happens to the diaphragm when it contracts?
- ___ 6. What happens to the ribs when they contract?
- ___ 7. When the ribs and diaphragm contract, what happens to the chest cavity?
- ___ 8. What happens to the air pressure in the cavity when a vacuum is produced?
- ___ 9. Why is it wrong to say that the air coming into the lungs forces the lungs open?
- ___ 10. What happens to the chest cavity before air is exhaled?
- ___ 11. What happens to the air pressure in your lungs prior to an exhalation?

L.O. L – 6 Nervous System Control

- ___ 1. The levels of what two substances are the main stimuli for us to breathe?
- ___ 2. These substances stimulate what part of the brain?
- ___ 3. Some receptors are able to detect low oxygen concentration. Give two locations for these receptors.
- ___ 4. Where are the receptors that detect that the lungs have expanded?
- ___ 5. What happens to the Medulla Oblongata when it is notified that the lungs are full?

L.O. L – 7 Internal and External Respiration

- ___ 1. Internal Respiration has CO₂ diffuses into the blood and joins with what molecule?
- ___ 2. These two molecules join together to make what?
- ___ 3. What enzyme runs the reaction above?

- ___ 4. The hydrogen ions are picked up by what molecule?
- ___ 5. Hydrogen ions and oxyhemoglobin bind together to aid in the release of what molecule into the tissues?
- ___ 6. Now the blood has a high concentration of what two molecules?
- ___ 7. In External Respiration, oxygen, from the lungs, binds with?
- ___ 8. This reaction produces what two molecules?
- ___ 9. The Hydrogen Ions are picked up by Bicarbonate to produce what two molecules?
- ___ 10. The Carbon Dioxide is then _____ into the lung and expelled by normal breathing?
- ___ 11. Why doesn't the Hydrogen Ions accumulate in this process?
- ___ 12. How is Hemoglobin essential in the blood?
- ___ 13. Give the chemical formula for the Bicarbonate Ion.

L.O. L – 8 Oxyhemoglobin, Carbaminohemoglobin, and Bicarbonate Ions

- ___ 1. List three ways that carbon dioxide can be transported by the blood. Give the percent that is carried in each method?
- ___ 2. Carbon dioxide can be transported directly by hemoglobin. What is the name of this compound?
- ___ 3. Carbon Dioxide is mainly carried in the form of what Ion?
- ___ 4. Give the name for a combination of hemoglobin and oxygen.
- ___ 5. Where is the partial pressure of Oxygen the greatest: in tissues or in the lung alveoli?
- ___ 6. What happens to the amount of oxygen held by hemoglobin when the partial pressure of oxygen decreases?
- ___ 7. Where is the partial pressure of oxygen least: in tissues or in lung alveoli?
- ___ 8. What effect does low temperature have on the amount of oxygen carried by hemoglobin?
- ___ 9. Where in the system is the temperature fairly low?
- ___ 10. What happens when the temperature rises at the internal tissues?