

Respiratory System Bookwork KEY (Page 403-429)

Directions: **Write down the questions**; use the textbook to answer the following questions. These will be test questions!

Questions to Answer:

(Pg. 428) Multiple Choice Questions #1, 2, 4, 5

#1. When you exhale, air flows through respiratory structures in which sequence?

D=Alveolus, bronchiole, bronchus, trachea, larynx, pharynx, nasal cavity

#2. When you inhale, the diaphragm:

D= contracts and moves inferiorly

#4. Lung collapse is prevented by:

High pressure in the pleural cavities.

#5. Disorders under COPD: B & C bronchitis and emphysema

Short Answer Questions #1, 2, 3, 5, 6, 7, 9, 10, 14, 15, 17, 20, 21

#1. What is the most basic function of respiration?

supplying the body with oxygen and dispose of carbon dioxide.

#2. Clearly explain the difference between external and internal respiration.

external= when air leaves the lungs and enters the pulmonary circuit. Pulmonary gas exchange

internal=when air is flowing into the lungs; diffuses where oxygen is unloaded and carbon dioxide is loaded into blood stream.

#3. Trace the route of air from the external nares to an alveolus.

External Nares-Pharynx (naso, oro, & laryngo)-Larynx-Trachea-Bronchiole Tubes (primary bronchi)-Bronchioles-Alveolus.

#5. Where in the respiratory tract is the air filtered, warmed and moistened?

respiratory mucosa and glands (produce mucus)

#6. The trachea has cilia and goblet cells that produce mucus. What is the specific protective function of each of these?

goblet cells=produce mucus (traps foreign particles) cilia=gentle current that moves contaminated mucus towards the throat where it can be swallowed and digested by stomach juices.

#7. Which primary bronchus is the more likely site for an inspired object to become lodged? Why?

The Right Primary Bronchus because it is wider, shorter and straighter.

#9. The lungs are mostly passageways and elastic tissue. What is the role of the passageways? Of the elastic tissue?

Passageways-for air to travel and carbon dioxide to leave. The elastic tissue allows for the alveolus to expand allowing for increased oxygen intake. When the elastic tissue is damaged, narrowed or clogged, the O₂ input and CO₂ output is decreased.

#10. What is it about the structure of the alveoli that makes them an ideal site for gas exchange? contains respiratory membrane (air-blood barrier) which has gas (air) flowing past on one side and blood flowing past on the other. Gas exchanges occur through simple diffusion through the respiratory membrane-oxygen passing from the alveolar air into the capillary blood and carbon dioxide leaving the blood to enter the gas filled alveolus.

#14. What causes air to flow out of the lungs during expiration?

passive process that depends more on the natural elasticity of the lungs than on muscle contraction. As the inspiration muscles relax and resume their initial resting length, the rib cage descends and the lungs recoil. Both the thoracic and intrapulmonary volumes decrease. As this occurs, the gases inside the lungs are forced more closely together, causing gas to flow out to equalize the pressure inside and outside the lungs. Normally, expiration is effortless.

#15. What is the major way that oxygen is transported in the blood? In carbon dioxide?

DON'T NEED TO KNOW :)

#17. Name the 2 major brain areas involved in the nervous control of breathing.

Medulla & Pons

#20. Define *hyperventilation*. If you hyperventilate, do you retain or expel more carbon dioxide? What effect does hyperventilation have on blood pH?

CO₂ begin to accumulate in the blood, blood pH increases, you begin to breath more deeply and rapidly. This blows (expels) off more carbon dioxide and decreases the amount of carbonic acid, which returns blood pH to the normal range.

#21. Compare and contrast the signs and symptoms of emphysema and chronic bronchitis.

Tobacco smoke or air pollution triggers both. Airways are obstructed and trapped in both conditions. Dyspnea (difficulty breathing) and frequent infections occurs in both. Respiratory failure is a concern for both.

Chronic Bronchitis=excessive mucus production, chronic cough, bronchospasms, continual bronchial irritation and inflammation.

Emphysema= breakdown of elastin in connective tissue in lungs, destruction of alveolar walls, lung fibrosis, air trapping (no diffusion)