Study Guide 13-2

7. Figure 13–2 is a diagram of the larynx and associated structures. On the figure, identify each of the structures listed below. Select a different color for each and use it to color in the coding circles and the corresponding structures on the figure. Then answer the questions following the diagram.

◯ Hyoid bone ◯ Tracheal cartilages ◯ Circoid cartilage

◯ Thyroid cartilage ◯ Epiglottis

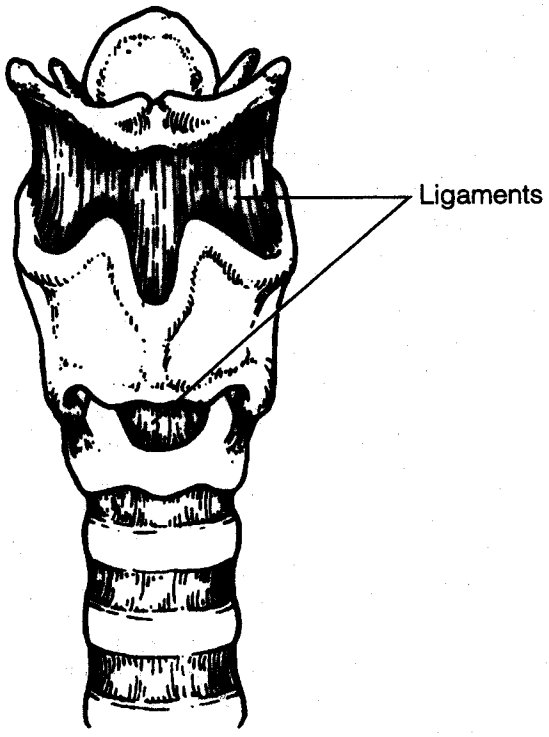

Figure 13–2

1. What are three functions of the larynx? _____

_____

_____

2. What type of cartilage forms the epiglottis? _____

3. What type of cartilage forms the other eight laryngeal cartilages? _____

4. Explain this difference. _____

_____

_____

5. What is the common name for the thyroid cartilage? _____

8. Figure 13–3 illustrates the gross anatomy of the lower respiratory system. Intact structures are shown on the left; respiratory passages are shown on the right. Select a different color for each of the structures listed below and use it to color in the coding circles and the corresponding structures on the figure. Then complete the figure by labeling the areas/structures that are provided with leader lines on the figure. Be sure to include the following: pleural space, mediastinum, apex of right lung, diaphragm, clavicle, and the base of the right lung.

- ◯ Trachea
- ◯ Larynx
- ◯ Intact lung
- ◯ Primary bronchi
- ◯ Secondary bronchi
- ◯ Visceral pleura
- ◯ Parietal pleura

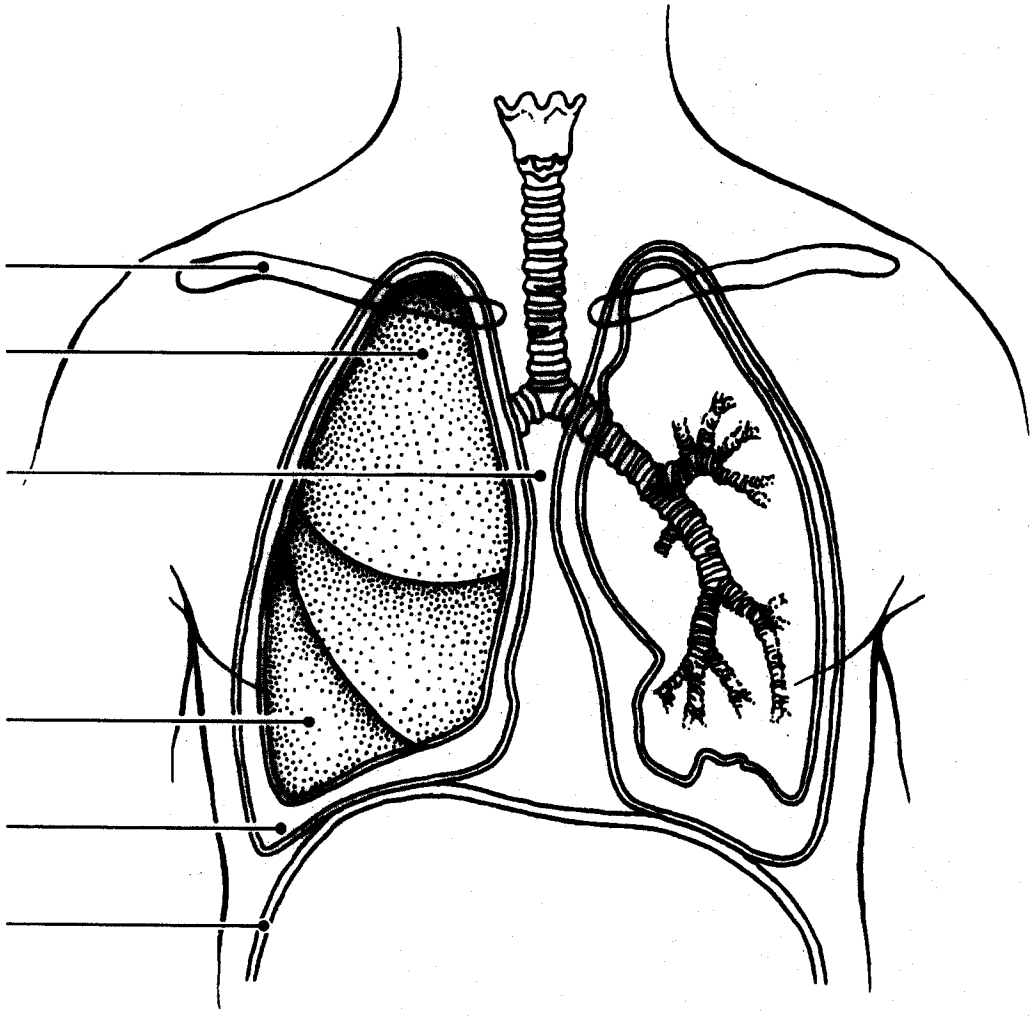

Figure 13–3

RESPIRATORY PHYSIOLOGY

10. Using the key choices, select the terms identified in the following descriptions by inserting the appropriate term or letter in the answer blanks.

Key Choices

A. Atmospheric pressure B. Intrapulmonary pressure C. Intrapleural pressure

_____ 1. In healthy lungs, it is always lower than atmospheric pressure (that is, it is negative pressure)

_____ 2. Pressure of air outside the body

_____ 3. As it decreases, air flows into the passageways of the lungs

_____ 4. As it increases over atmospheric pressure, air flows out of the lungs

_____ 5. If this pressure becomes equal to the atmospheric pressure, the lungs collapse

_____ 6. Rises well over atmospheric pressure during a forceful cough

11. Many changes occur within the lungs as the diaphragm (and external intercostal muscles) contract and then relax. These changes lead to the flow of air into and out of the lungs. The activity of the diaphragm is given in the left column of the following table. Several changes in condition are listed in the column heads to the right. Complete the table by checking (✓) the appropriate column to correctly identify the change that would be occurring relative to the diaphragm's activity in each case.

Activity of diaphragm	**Changes in**							
	Internal volume of thorax		**Internal pressure in thorax**		**Size of lungs**		**Direction of air flow**	
(↑ = increased) (↓ = decreased)	↑	↓	↑	↓	↑	↓	Into lung	Out of lung
Contracted, moves downward								
Relaxed, moves superiorly								

12. Use the key choices to respond to the following descriptions. Insert the correct term or letter in the answer blanks.

Key Choices

A. External respiration
B. Expiration
C. Inspiration
D. Internal respiration
E. Ventilation (breathing)

_____ 1. Period of breathing when air enters the lungs

_____ 2. Exchange of gases between the systemic capillary blood and body cells

_____ 3. Alternate flushing of air into and out of the lungs

_____ 4. Exchange of gases between alveolar air and pulmonary capillary blood

13. Although normal quiet expiration is largely passive due to lung recoil, when expiration must be more forceful (or the lungs are diseased), muscles that increase the abdominal pressure or depress the rib cage are enlisted.

1. Provide two examples of muscles that cause abdominal pressure to rise.

_____ and _____

2. Provide two examples of muscles that depress the rib cage.

_____ and _____

14. Four nonrespiratory movements are described here. Identify each by inserting your answers in the spaces provided.

1. Sudden inspiration, resulting from spasms of the diaphragm. _____
2. A deep breath is taken, the glottis is closed, and air is forced out of the lungs against the glottis; clears the lower respiratory passageways. _____
3. As just described, but clears the upper respiratory passageways. _____
4. Increases ventilation of the lungs; may be initiated by a need to increase oxygen levels in the blood. _____