

# Workbook



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# The Respiratory System

## Exercise

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### Questions

- 1) The respiratory system\_\_\_\_\_.
  - a. provides body tissues with oxygen.
  - b. provides body tissues with oxygen and CO<sub>2</sub>.
  - c. establishes how many breaths are taken per minute.
  - d. provides the body with CO<sub>2</sub>.
  
- 2) Air is warmed and humidified in the nasal passages. This helps to\_\_\_\_\_.
  - a. ward off infection.
  - b. decrease sensitivity during breathing.
  - c. prevent damage to the lungs.
  - d. all the above.
  
- 3) Which is the order of airflow during inhalation?
  - a. nasal cavity, trachea, larynx, bronchi, bronchioles, alveoli.
  - b. nasal cavity, larynx, trachea, bronchi, bronchioles, alveoli.
  - c. nasal cavity, larynx, trachea, bronchioles, bronchi, alveoli.
  - d. nasal cavity, trachea, larynx, bronchioles, bronchi, alveoli.
  
- 4) The inspiratory reserve volume measures the
  - a. amount of air remaining in the lung after a maximal exhalation.
  - b. amount of air that the lung holds.
  - c. amount of air that can be further exhaled after a normal breath.
  - d. amount of air that can be further inhaled after a normal breath.

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- 5) Of the following, which does not explain why the partial pressure of oxygen is lower in the lung than in the external air?
- Air in the lung is humidified; therefore, water vapor pressure alters the pressure.
  - CO<sub>2</sub> mixes with oxygen.
  - Oxygen is moved into the blood and is headed to the tissues.
  - Lungs exert a pressure on the air to reduce the oxygen pressure.
- 6) The total lung capacity is calculated using which of the following formulas?
- residual volume + tidal volume + inspiratory reserve volume.
  - residual volume + expiratory reserve volume + inspiratory reserve volume.
  - expiratory reserve volume + tidal volume + inspiratory reserve volume.
  - residual volume + expiratory reserve volume + tidal volume + inspiratory reserve volume.
- 7) How would paralysis of the diaphragm alter inspiration?
- It would prevent contraction of the intercostal muscles.
  - It would prevent inhalation because the intrapleural pressure would not change.
  - It would decrease the intrapleural pressure and allow more air to enter the lungs.
  - It would slow expiration because the lung would not relax.
- 8) Restrictive airway diseases.
- increase the compliance of the lung.
  - decrease the compliance of the lung.
  - increase the lung volume.
  - decrease the work of breathing.
- 9) Alveolar ventilation remains constant when \_\_\_\_.
- the respiratory rate is increased while the volume of air per breath is decreased.
  - the respiratory rate and the volume of air per breath are increased.
  - the respiratory rate is decreased while increasing the volume per breath.
  - both a and c.

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**10)** Which of the following will **NOT** facilitate the transfer of oxygen to tissues?

- a. decreased body temperature.
- b. decreased pH of the blood.
- c. increased CO<sub>2</sub>.
- d. increased exercise.

**11)** The majority of CO<sub>2</sub> in the blood is transported by\_\_\_\_\_.

- a. binding to hemoglobin.
- b. dissolution in the blood.
- c. conversion to bicarbonate.
- d. binding to plasma proteins.

**12)** Most of the oxygen in the blood is transported by\_\_\_\_\_.

- a. dissolution in the blood.
- b. being carried as bicarbonate ions.
- c. binding to blood plasma.
- d. binding to hemoglobin.

### Answer Key

- 1) a
- 2) c
- 3) b
- 4) d
- 5) d
- 6) d
- 7) b
- 8) b
- 9) d
- 10) a
- 11) c
- 12) d