

**Goal** • Check your understanding of Chapter 12.

### What to Do

Circle the letter of the best answer.

1. Which of the following describes the process of cellular respiration?
  - A. produces glucose and energy
  - B. requires carbon dioxide and water
  - C. requires oxygen and glucose
  - D. uses carbon dioxide to release energy stored in glucose
2. Which of the following organ systems is directly involved with cellular respiration?
  - A. digestive system
  - B. muscular system
  - C. nervous system
  - D. skeletal system
3. Which of the following is the main function of the small intestine?
  - A. break food down into nutrients for absorption
  - B. move food to the stomach
  - C. process solid waste material
  - D. remove solid waste material
4. Which of the following is the main function of the kidneys?
  - A. excrete urine
  - B. filter blood to produce urine
  - C. store urine
  - D. transport urine
5. Which of the following statements about the connections between the circulatory and respiratory systems is correct?
  - A. Capillaries are surrounded by a mesh-like network of small blood vessels called alveoli.
  - B. The blood picks up oxygen from the cells and delivers it to the lungs to be exhaled from the body.
  - C. The carbon dioxide passes through (diffuses through) the membrane of the alveolus and the membrane of the capillary into the blood.
  - D. The oxygen passes through (diffuses through) the membrane of the alveolus and the membrane of the capillary into the blood.

6. Which of the following devices are used to measure blood pressure?
- sphygmomanometer and stethoscope
  - sphygmomanometer and thermometer
  - stethoscope and insulin pump
  - stethoscope and thermometer
7. Which of the following can be indicated by high blood pressure?
- blood loss from an injury
  - flexible, elastic arteries
  - large, open arteries
  - small, narrow arteries
8. Which of the following factors can increase blood pressure?
- high-fat diet
  - low-fat diet
  - low-salt diet
  - regular exercise
9. Which of the following is true about smoking?
- Carbon dioxide in smoke changes to oxygen in the lungs.
  - Cigarette smoking damages the digestive system more than the circulatory system.
  - Nicotine in cigarette smoke causes blood vessels to constrict.
  - Nicotine in cigarette smoke causes blood vessels to dilate.
10. After you eat a meal, the concentration of glucose in your blood increases. In response, the pancreas releases insulin, to move glucose from the blood to body tissues. This response is an example of your body doing something to maintain which of the following?
- circulation
  - homeostasis
  - minerals
  - water balance

**Match the Term on the left with the best Descriptor on the right.**  
**Each Descriptor may be used only once.**

Term	Descriptor
_____ 11. arteries	A. carry deoxygenated blood back to the heart
_____ 12. capillaries	B. carry oxygenated blood away from the heart
_____ 13. cilia	C. oxygen, nutrients, and glucose diffuse through the walls of these
_____ 14. veins	D. tiny hairs that filter air and push particles

**Short Answer Questions**

15. How can a diet high in saturated fats affect the health of your circulatory system?

---

---

---

16. Emphysema is a lung disease that can be caused by smoking. In emphysema, the alveoli in the lungs lose their elasticity. As a result, the alveoli are no longer effective at moving air in and out. In effect, “dead air” pockets form in the lungs where air does not move in or out.

(a) What effect do you think emphysema has on gas exchange?

---

---

(b) What do you think the symptoms would be in someone who had a severe case of emphysema?

---

---

(c) Considering that lung transplants are almost always unsuccessful, what might you suggest as a treatment for someone who is suffering from emphysema?

---

---