The Immune System

A. Functions of the Immune System

1. Many ________________ keep pathogens from entering the body. The ________________ system also has defenses to stop pathogens.

2. Choices such as eating healthful food, getting enough sleep, exercising regularly, and using sunscreen support the ________________.

B. Parts of the Immune System

1. An immune defense that protects against more than one type of pathogen is a(n) ________________ defense. First-line and second-line defenses are ________________.

2. The ________________ keeps dirt and germs from entering the body.

3. Washing the hands with ________________ and water easily removes most pathogens from the skin.

4. Hairlike structures in the ________________ help protect the body by trapping dirt and pathogens. This keeps them from reaching the rest of the ________________ system.

5. ________________ traps pathogens and enables the respiratory system to remove them by coughing, sneezing, or swallowing.

6. The ________________ contains strong acids that destroy many pathogens.

7. Vomiting and diarrhea remove pathogens from the ________________.

8. The ________________ system moves pathogens to organs that fight infection.

9. The ________________ system and the circulatory system work together to increase the body’s temperature to fight pathogens more effectively.

10. Some ________________ blood cells can surround and destroy bacteria directly. Others release ________________ that make it easier to kill the pathogens.

11. Some white blood cells produce ________________ that destroy viruses and other foreign substances that get past the first-line defenses.

12. ________________ causes an injured area to become red and swollen.

13. The ________________ response cleans the area of the injury and keeps the infection from spreading.
Lesson Outline continued

14. Third-line defenses are __________________ to foreign substances.
   a. A(n) __________________ is a substance that causes an immune response.
      It can be on the surface of a(n) __________________.
   b. Proteins called __________________ can attach to the antigen and make it useless.
   c. __________________ form and mature in the bone marrow. They secrete __________________ into the blood.
   d. __________________ form in the bone marrow and mature in the thymus gland. They produce a protein antibody that becomes part of a(n) __________________.

15. A(n) __________________ is an overly sensitive immune response to common antigens.

16. The resistance to specific pathogens is __________________.
   a. If the body produces antibodies in response to an antigen, this is called __________________.
   b. A(n) __________________ puts weakened or dead pathogens in the body, usually by injection or by mouth. It makes the body develop specific __________________ that rapidly fight a pathogen’s antigens.
   c. __________________ is the introduction of antibodies that were produced outside the body.

C. The Immune System and Homeostasis

1. The immune system works to maintain your body’s __________________.

2. Body systems, including the circulatory system and __________________ system, work together to protect against invaders.