CHAPTER 43—THE BODY'S DEFENSES
AP BIOLOGY

1. What's the difference between specific and nonspecific lines of defense?

   _____

   _____

2. How do each of these provide nonspecific lines of defense?

Skin	
Tears	
Inflammation	
Phagocytes	

3. Match the description with the correct compound or process.

   A. Antibodies
   B. Antigen
   C. Complement
   D. Cytokines
   E. Histamine
   F. Interferons
   G. Lysozyme
   H. Perforin
   I. Phagocytosis
   J. Pyrogens

_____ Enzyme that digests the cell walls of many kinds of bacteria; present in some mucus secretions

_____ Ingestion of invading organisms by certain types of white blood cells

_____ Released by basophils and mast cells in response to tissue injury; triggers dilation and increased permeability of nearby capillaries

_____ Molecules that set the body's thermostat at a higher temperature

_____ Group of 20 or more blood proteins that cooperate with other defense mechanisms; may amplify inflammation, enhance phagocytosis or lyse pathogens; activated by immune response or exposure to antigens

_____ Proteins produced by virus-infected cells; induce other cells to produce chemicals that inhibit viral reproduction

_____ Foreign molecule that triggers a specific response by lymphocytes

_____ Proteins, produced by plasma cells that bind to specific antigens

_____ Proteins or peptides that serve to stimulate lymphocytes

_____ Protein that forms pores in a target cell's membrane

4. Match the function with the correct cell.
   A. Cytotoxic T cells
   B. Helper T cells
   C. Memory B cells
   D. Memory T cells
   E. Plasma cells
   F. Suppressor T cells

_____ Responsible for cell-mediated immunity; track down & attack bacteria, fungi, protozoa and foreign tissues that contain targeted antigen

_____ Remain in reserve; differentiate into cytotoxic T cells with second exposure to antigen

_____ Depress the action of other T cells and B cells by secreting suppression factors; put on the brakes and limit the degree of the immune system action from a single exposure to an antigen

_____ Release cytokines that coordinate specific and nonspecific defenses and stimulate cell-mediated and antibody-mediated immunity

_____ Derived from B cells; produce antibodies

_____ Remain in reserve; differentiate to form plasma cells with second exposure to antigen

5. What is the difference between passive and active immunity?

Passive immunity	**Active Immunity**

6. How do cytotoxic T cells destroy pathogens, foreign cells and cancer cells?

Pathogens	
Foreign cells	
Cancer cells	

7. Why do B and T cells ignore “self” antigens and attack foreign (“nonself”) antigens?

_____

_____

8. Match the description with the correct term.
   A. Allergens
   B. Allergies
   C. Autoimmune disorders
   D. Immunodeficiency disease

_____ Immune system fails to develop normally or the immune response is blocked

_____ Develop when the immune response mistakenly targets normal body cells & tissues

_____ Inappropriate or excessive immune responses to antigens

_____ Antigens that trigger allergic reactions

_____ AIDS/HIV

_____ Psoriasis, rheumatoid arthritis, myasthenia gravis, multiple sclerosis, narcolepsy, Type 1 diabetes, Graves' disease, Addison's disease, pernicious anemia, lupus

9. Listed below are characteristics of the primary and secondary responses to a specific antigen. Determine if the statement is true of the primary response (**1**) or the secondary response (**2**.)

_____ Initial response to antigen

_____ Does not appear immediately

_____ Gradual, sustained rise in concentration of circulating antibodies

_____ Antibody activity peaks several weeks after exposure to antigen

_____ Appropriate B cell must be activated and, once activated, must divide and differentiate into plasma cells

_____ Activates memory B cells

_____ Very rapid increase in antibody activity and concentration

_____ Memory B cells divide and differentiate into plasma cells

_____ Produces a much faster and stronger response

_____ Can be substituted with immunization

10. Compare and contrast the cell-mediated and humoral immune responses.

Cell-mediated	
Humoral	