MULTIPLE CHOICE

1. Neutrophils:
   a. are phagocytic cells  
   b. produce histamine  
   c. produce antibodies  
   d. are elevated during an allergic response  
   ANS: A

2. Which cells are required to process and present antigens from foreign material as the initial step in the immune response?
   a. T–helper cells  
   b. macrophages  
   c. eosinophils  
   d. monocytes  
   ANS: B

3. Humoral immunity is mediated by:
   a. natural killer cells  
   b. T-lymphocytes (T cells)  
   c. B-lymphocytes (B cells)  
   d. neutrophils  
   ANS: C

4. A patient experienced an episode of influenza 6 months ago. A recent exposure to a mutated form of the same virus would result in:
   a. a primary immune response  
   b. a secondary immune response  
   c. passive natural immunity to the virus  
   d. avoidance of any flu infection  
   ANS: A

5. Which type of immunity is provided by a vaccination?
   a. active natural  
   b. active artificial  
   c. passive natural  
   d. passive artificial  
   ANS: B
6. When an allergen binds with IgE antibodies on mast cells, resulting in release of chemical mediators, this reaction is called:
   a. cytotoxic hypersensitivity
   b. immune complex hypersensitivity
   c. type I hypersensitivity
   d. type IV hypersensitivity
   ANS: C

7. The role of memory cells is to:
   a. change into an antibody-secreting cell following activation
   b. immediately secrete antibodies following the first exposure to antigen
   c. recognize the antigen and stimulate the immune response
   d. bind complement to the antibody
   ANS: C

8. Which statement applies to contact dermatitis?
   a. It occurs when IgE antibodies on the skin react with the causative substance.
   b. It may result from ingested foods.
   c. Urticaria (hives) gradually spread over the body.
   d. A type IV reaction occurs in specific areas.
   ANS: D

9. Which of the following causes anaphylaxis?
   a. a severe, systemic allergic reaction
   b. type III hypersensitivity
   c. cell-mediated hypersensitivity
   d. immune complex deposits in many tissues
   ANS: A

10. Why is anaphylaxis considered a critical situation?
    a. The heart rate is irregular.
    b. Carbon dioxide levels in the body are greatly increased.
    c. Bronchoconstriction and systemic vasodilation develop rapidly.
    d. Manifestations are not obvious in the initial stages.
    ANS: C

11. Incompatible blood transfusions result in:
    a. hemolysis of erythrocytes
    b. a type I immune response
    c. deposits in multiple organs
    d. immune deficiency
    ANS: A
12. An autoimmune disease is:
   a. excessive formation of antibodies following exposure to foreign material
   b. an extreme response to normally harmless material in the environment
   c. an abnormal response to ingested food and drugs
   d. failure of the immune system to distinguish self from nonself

   ANS: D

13. Systemic lupus erythematosus is caused by:
   a. a chronic allergic condition
   b. development of an immune-deficient state
   c. a deficiency of T-lymphocytes
   d. immune complex deposits of antinuclear antibodies

   ANS: D

14. Distinguishing clinical features of systemic lupus erythematosus include:
   a. inflammation in multiple organs
   b. lack of a specific diagnostic blood test
   c. acute onset, nonprogressive course
   d. typical skin rash on the chest and back

   ANS: A

15. Which of the following are the target cells for HIV?
   a. helper T-lymphocytes (CD4 lymphocytes)
   b. B-lymphocytes
   c. natural killer cells
   d. macrophages

   ANS: A

16. A diagnosis of HIV positive means that:
   a. the number of T-lymphocytes in the circulating blood is decreased
   b. significant opportunistic infection is present in the body
   c. the individual has AIDS
   d. the virus and its antibodies are in the blood

   ANS: D

17. HIV infection impairs:
   a. humoral immunity
   b. cell-mediated immunity
   c. both humoral and cell-mediated immunity
   d. neither type of immunity

   ANS: C

18. HIV is transmitted by:
   a. kissing or coughing into another’s face
b. infected secretions on toilet seats  
c. any contaminated surface and skin  
d. blood, semen, and vaginal secretions from an infected person  

ANS: D

19. Serious infections frequently occurring in patients with AIDS include:  
   1. tuberculosis  
   2. *Pneumocystis carinii* pneumonia  
   3. influenza  
   4. tetanus  
   a. 1, 2  
   b. 1, 4  
   c. 2, 3  
   d. 3, 4  

ANS: A

20. Which of the following statements does NOT apply to MHC proteins or molecules?  
   a. They are genes on chromosome 6.  
   b. All members of a family have identical MHCs.  
   c. They alert the immune system to virus-infected cells.  
   d. A close match is essential for successful tissue transplants.  

ANS: B

21. CD4-positive helper T-cells function by:  
   a. direct cytotoxic action  
   b. facilitating all immune system activity  
   c. production of immunoglobulins  
   d. inactivating allergens  

ANS: B

22. Host-versus-graft disease refers to:  
   a. hyperacute rejection of tissue  
   b. T-cells in grafted tissue attacking host cells  
   c. infection resulting from immunosuppression therapy  
   d. transplant rejection by the recipient’s immune system  

ANS: D

23. Which of the following complications does NOT occur frequently in AIDS patients?  
   a. Kaposi’s sarcoma  
   b. wasting syndrome  
   c. lymphoma  
   d. polyarthritis  

ANS: D
24. Which of the following characteristics apply to the agent HIV?
   1. It contains 2 strands of DNA.
   2. It tends to mutate frequently to form new strains.
   3. The incubation period is extremely short.
   4. It is inactivated by heat and many disinfectants.
   a. 1, 2
   b. 1, 3
   c. 2, 4
   d. 3, 4
   ANS: C

25. In cases of HIV infection, the “window period” refers to the time between:
   a. entry of the virus into the blood and the initial manifestations
   b. entry of the virus into the body and the appearance of antibodies in the blood
   c. entry of the virus into the body and a significant drop in CD4 T-helper lymphocyte count
   d. diagnosis of “HIV positive” and diagnosis of “AIDS”
   ANS: B

26. Which of the following is an effect of cytokines? They:
   a. activate and stimulate proliferation of B and T lymphocytes
   b. destroy antigens quickly
   c. increase the rate of mitosis in tumors
   d. cause immediate pain
   ANS: A

27. What does seroconversion mean in relation to HIV and AIDS?
   a. The virus has been identified in the blood and body fluids.
   b. Antibodies for HIV have been identified in the blood.
   c. HIV was found in lymphocytes.
   d. Active infection has developed in the patient.
   ANS: B

28. Which of the following statements is TRUE regarding a patient who is HIV positive?
   a. No medication is required until T4 cell count drops below normal range.
   b. Antibodies are present, destroying the virus and preventing transmission to others.
   c. Antibodies in the blood indicate presence of virus and possible transmission to others.
   d. Enzymes have not yet converted RNA to DNA for replication.
   ANS: C

29. The term tolerance refers to:
   a. surveillance and destruction of new cancer cells by the immune system
   b. the ability of the immune system to ignore “self” cells
30. Which of the following statements apply to the complement system?
   a. It is activated by IgE.
   b. It blocks the inflammatory response.
   c. It consists of proteins in the blood that must be activated.
   d. It may destroy antibodies in the circulation.
   ANS: C

31. Which of the following statements regarding immunoglobulins is TRUE?
   a. They consist of a unique sequence of amino acids.
   b. They are produced in the red bone marrow.
   c. They are attached to mucosal membranes at entry points into the body.
   d. IgA binds to allergens.
   ANS: A

32. Which of the following is NOT a cause of immunodeficiency?
   a. hypoplasia of the thymus
   b. delayed hypersensitivity
   c. immunosuppressive drugs
   d. atrophy of the lymph nodes
   ANS: B

33. Which statement is TRUE regarding infants born to HIV infected mothers?
   a. Infants usually test negative for HIV after birth.
   b. There is little risk of infected mothers passing the virus to their infants during delivery.
   c. Breast milk does not contain HIV or antibodies.
   d. Infants test positive for HIV due to presence of maternal antibodies.
   ANS: D

34. The most common cause of death in AIDS patients is:
   a. HIV encephalopathy
   b. tuberculosis
   c. *Pneumocystis carinii* pneumonia
   d. *Candida* infection
   ANS: C