BIO 206 Exam 2 Practice Questions

1. Which of the following phrases best defines “blood pressure”?
   a. opposition to the flow of blood through a vessel
   b. cardiac output divided by peripheral resistance
   c. the volume of blood moving through a vessel during a given period of time
   d. the force per unit area exerted on the wall of a vessel by the blood contained inside
   e. the friction created by blood as it travels within a blood vessel

2. What can your body rapidly adjust to make changes in resistance to blood flow?
   a. viscosity of the blood
   b. the length of the blood vessel
   c. the radius of the blood vessel
   d. All of the above are correct.
   e. None of the above is correct.

3. Which one of the following equations is true?
   a. BP = HR × SV ÷ TPR
   b. BP = HR ÷ TPR
   c. BP = (HR + SV) × TPR
   d. BP = CO × TPR
   e. None of the equations above is true.

4. Consider the aorta and the inferior vena cava as they both pass through the diaphragm. Assume that the blood flow through the aorta is equal to the blood flow through the inferior vena cava (IVC). Also assume that the resistance in the aorta is greater than the resistance in the inferior vena cava. If these two assumptions are true,
   a. then the pressure gradient in the aorta is greater than the pressure gradient in the inferior vena cava.
   b. then the inside diameter of the aorta is larger than the inside diameter of the IVC.
   c. then the heart is in ventricular systole and atrial diastole.
   d. then the elasticity of the inferior vena cava is greater than the elasticity of the aorta.
   e. then the viscosity of blood in the aorta is greater than the viscosity of blood in the IVC.

5. Which one of the following statements is true?
   a. Blood pressure in the capillaries of the stomach is greater than blood pressure in the inferior vena cava.
   b. Blood pressure in the inferior vena cava is greater than blood pressure in the capillaries of the stomach.
   c. Blood pressure in the inferior vena cava is equal to blood pressure in the capillaries of the stomach.

6. Pulse pressure
   a. is about 70 beats per minute in the average healthy adult.
   b. is often measured at the brachial vein.
   c. is the difference between systolic blood pressure and diastolic blood pressure.
   d. is equal to the blood pressure resulting from ventricular systole.
   e. None of the responses above is correct.
7. Which one of the following factors affects blood pressure?
   a. cardiac output
   b. peripheral resistance
   c. blood volume
   d. All of the factors above affect blood pressure.
   e. Factors “a” and “b” affect blood pressure, but not “c.”

8. The _________________ send(s) signals via the vagus nerve.
   a. cardioacceleratory center
   b. cardioinhibitory center
   c. carotid and aortic chemoreceptors
   d. vasomotor center
   e. None of the responses above is correct.

9. John had surgery performed on his chest in order to remove a tumor. During the surgery, the branches of John’s glossopharyngeal nerves that innervate his carotid and aortic baroreceptors were cut. As a result of this damage to the nerves,
   a. John’s peripheral resistance and blood pressure both increase.
   b. John’s peripheral resistance decreases and his blood pressure increases.
   c. John’s cardiac output increases and his blood pressure decreases.
   d. John’s cardiac output decreases and his blood pressure decreases.
   e. John’s cardiac output and peripheral resistance both decrease.

10. An increase in the level of CO₂ in the blood will stimulate which one of the following responses?
    a. a decrease in cardiac output
    b. increased activity of the cardioinhibitory center
    c. increased activity of the vasomotor center
    d. decreased activity of the vasomotor center
    e. None of the above is correct.

11. Which one of the following may alter blood pressure by causing vasodilation?
    a. antidiuretic hormone
    b. epinephrine
    c. histamine
    d. nitric oxide
    e. More than one of the responses above is correct.

12. ACE inhibitors are drugs that inhibit angiotensin-converting enzyme. These drugs inhibit the formation of angiotensin II. Given this information, which one of the following statements is most likely true?
    a. ACE inhibitors stimulate the production of aldosterone.
    b. ACE inhibitors cause the body to retain water.
    c. ACE inhibitors cause the body to retain more sodium.
    d. ACE inhibitors are often used to treat high blood pressure.
    e. None of the above can be true.
13. Which one of the following statements is **NOT** true of the innate immune system?

   a. It attempts to protect the body against all pathogens.
   b. It includes the mucosal lining of the digestive tract.
   c. Neutrophils are an important part of the innate system.
   d. The innate system does not include any lymphocytes.
   e. Complement is part of the innate immune system.

14. A macrophage can most easily phagocytize

   a. a bacteria cell.
   b. an opsonized bacterial cell.
   c. an opsonized multicellular parasite.
   d. a tumor cell.
   e. a virus.

15. ________________ is to natural killer cells as _________________ is to complement.

   a. Perforin, MAC
   b. Antibody, interferon
   c. Opsonization, adherence
   d. Adherence, lysozyme
   e. Cytokine, interferon

16. Immunity is best defined as

   a. the production of antibodies against a pathogen.
   b. the response produced by a vaccine.
   c. the innate defense system of the body.
   d. resistance to disease.

Match each statement 17-19 to one of the five classes of immunoglobulins:

   a. IgA
   b. IgG
   c. IgM
   d. IgD
   e. IgE

17. This type of immunoglobulin may form pentamers, and it is particularly good at agglutination.

18. Binding of this type of immunoglobulin to basophils and mast cells stimulates the release of histamine.

19. This is the most abundant type of immunoglobulin in the plasma.

20. Antibody molecules may fight antigens in a variety of ways. Which one of the following is **NOT** a way in which antibodies fight antigens?

   a. neutralizing antigens by binding to them and simply rendering them ineffective
   b. binding to the target and assisting complement to lyse the cell
   c. inserting into a bacterial cell membrane and making holes in the bacteria
   d. binding to the target and causing agglutination
   e. precipitating soluble antigens and removing them from solution
21. B cells become immunocompetent in the ___________ and T cells become immunocompetent in the ___________.
   a. thymus, spleen  
   b. spleen, bone marrow  
   c. bone marrow, spleen  
   d. lymph nodes, thymus  
   e. bone marrow, thymus  

22. During clonal selection of a B cell, the number of plasma cells generated is ___________ the number or memory cells generated.
   a. greater than  
   b. less than  
   c. equal to  

23. Class I MHC proteins may bind to ________ antigens, and they are recognized by ___________.
   a. endogenous, CD4 cells  
   b. endogenous, CD8 cells  
   c. exogenous, CD4 cells  
   d. exogenous, CD8 cells  
   e. both endogenous and exogenous, helper T cells  

24. Which one of the following statements is NOT true?
   a. A “cytotoxic T cell” is the same thing as a “killer T cell”.  
   b. A killer T cell attacks its victims with proteins called perforins.  
   c. A “natural killer cell” is the same thing as a “killer T cell”.  
   d. Cytotoxic T cells participate in the cell-mediated immune response.  
   e. All of the statements above are true.