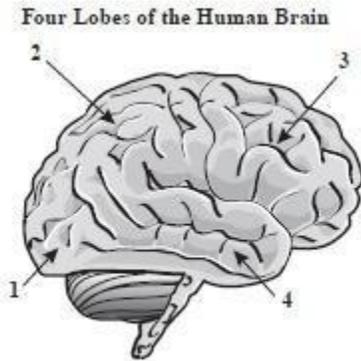


Chapters 29, 30, & 31 Celebration of Knowledge

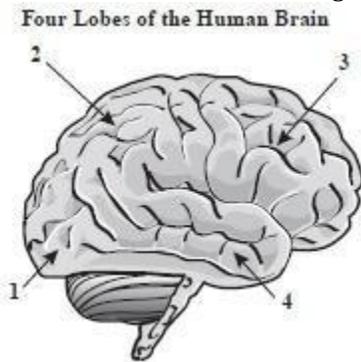
1. The illustration below shows four lobes of the human brain.



What lobe is designated by label 2?

- A. temporal
- B. parietal
- C. occipital
- D. frontal

2. Which lobe of the brain is designated by number 4?



- A. occipital lobe
- B. parietal lobe
- C. frontal lobe
- D. temporal lobe

3. The rate at which blood flows through the human body changes in response to many factors. Which statement describes one of these factors and its effect on blood flow?

- A. A high viscosity of blood causes an increased resistance in the blood vessels and leads to slow blood flow.
- B. A low blood pH decreases the rate of diffusion through the blood vessels and leads to slow blood flow.
- C. The changing of the shape of red blood cells to a crescent shape decreases resistance and lead to a faster blood flow.
- D. The narrowing of blood vessels increases pressure and leads to a faster blood flow.

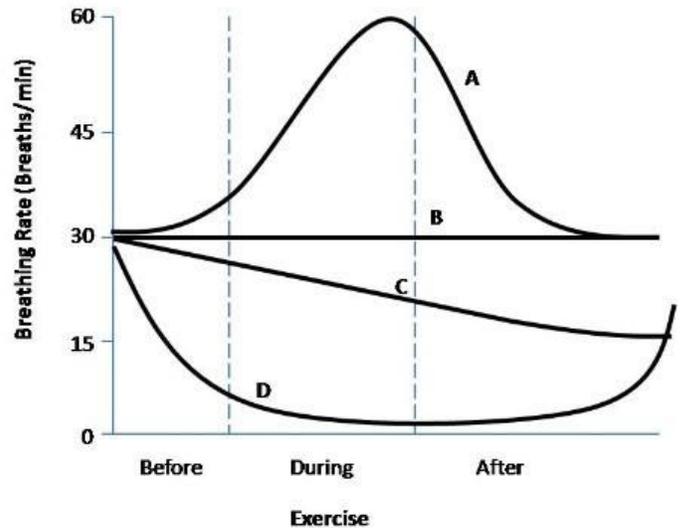
4. Which of the following factors would most directly affect blood flow through the circulatory system?

- A. blood pressure
- B. blood sugar
- C. respiratory rate
- D. outside temperature

5. What causes blood pressure?

- A. cholesterol in the blood
- B. stress that exercise puts on heart muscle
- C. contraction of the ventricles in the heart
- D. removal of oxygen from the blood

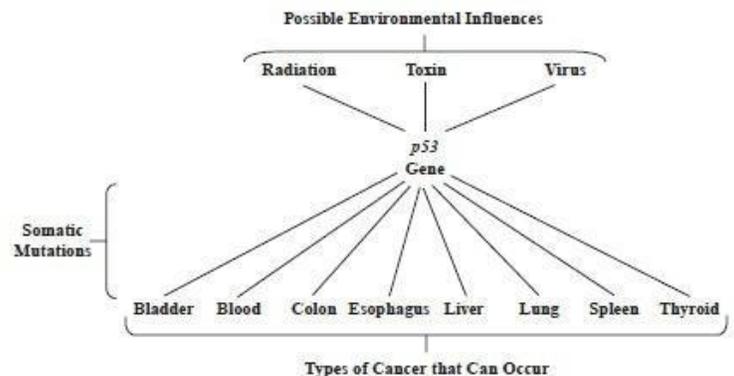
6. Which line in the graph above best illustrates an effect of the carbon dioxide level in the blood on breathing rate before, during and after a period of exercise?



7. Which of the following best describes the connection between cardiovascular disease and age?

- A. As people age, their blood vessels become more elastic leading to less cardiovascular disease.
- B. As people age, the heart becomes more efficient with each pump, increasing cardiac output.
- C. As people age, blood pressure decreases leading to more cardiovascular disease.
- D. As people age, plaque builds up in the arteries increasing vessel resistance, which leads to disease.

8. The p53 gene codes for the p53 protein that locates DNA errors for cellular repair. The diagram below shows the relationship among possible environmental influences, the p53 gene, and cancer.



9. Which of the following statements best describes the relationships among possible environmental influences, the p53 gene, and cancer?

- A. Environmental influences can lead to mutations in the p53 gene, which can cause certain cancers.
- B. Increased levels of p53 protein, rather than environmental influences, can cause certain cancers.
- C. Mutations in the p53 gene increase environmental influences that can cause certain cancers.
- D. Genes such as p53 are less casual than environmental influences in stimulating certain cancers.

10. After an initial infection, B-cells recognize the measles virus. How is this helpful in human immune response?

- A. The B-cells use this recognition to defend the body against other pathogens, such as bacteria.
- B. The B-cells more quickly recognize and respond to any other virus that invades the body.
- C. The B-cells produce antibodies more quickly if the measles virus is encountered again.
- D. The B-cells transfer this recognition to T-cells, which will then devour the viruses.

11. What is the body's first line of defense against infection by foreign organisms?

- A. antibodies
- B. lymph nodes
- C. white blood cells
- D. the skin

12. What is immunity?

- A. The body's ability to produce cells that inactivate foreign cells or substances.
- B. The body's ability to regulate homeostasis through feedback loops.
- C. The body's ability to produce the "fight or flight" response.
- D. The body's ability to use the endocrine system to fight disease.

13. What is the term for a strong response to a harmless antigen in the environment?

- A. cell-mediated immunity
- B. an allergy
- C. inflammatory response
- D. an autoimmune disease

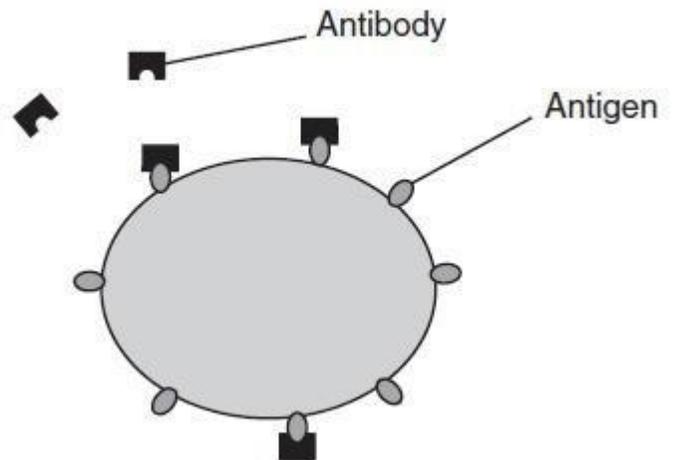
14. White blood cells are an important part of the human immune response. Two types of white blood cells, neutrophils and macrophages, act as phagocytes. Phagocytes perform which of the following functions in the human body?

- A. They produce antibodies.
- B. They bind to antigens and develop into plasma cells.
- C. They form a barrier against pathogens.
- D. They engulf and destroy bacteria.

15. Although vaccines cannot be used to treat a person who is sick, they can help to prevent infections. Vaccinations tell the body to create "memory cells", which will function later to create antibodies against certain pathogens. When a person is vaccinated, what are they injected with?

- A. antibodies to a disease bacterium
- B. live, inactive viruses
- C. weakened viruses or antigens from the virus
- D. blood from a person who has had the disease

16. An activity that occurs in the human body is shown below.



This activity helps to do which of the following?

- A. provide protection against pathogens
- B. produce antibiotics to control disease
- C. eliminate harmful gene alterations
- D. regulate production of ATP by the cell

17. Which of the following describes a way that a person's health can be affected by heredity?

- A. A person with a family history of obesity is more likely to catch a common cold.
- B. A person with a family history of high blood pressure is more likely to have heart disease.
- C. A person with a family history of obesity is less likely to enroll in a weight loss plan.
- D. A person with a family history of cancer is less likely to be screened for cancer.

18. Many species of bacteria have become resistant to antibiotics because antibiotics have been so widely used. Now, bacteria that used to be killed by antibiotics are more difficult to treat. What is the best way to proceed in dealing with this public health problem?

- A. Antibiotics should no longer be used.
- B. Antibiotics should be made available to anyone without a prescription.
- C. Antibiotics should only be prescribed to people with bacterial infections.
- D. Anti-viral medications should now be used instead of antibiotics.

19. How do human diseases caused by bacteria and diseases caused by viruses react to antibiotics?

- A. Neither responds to antibiotics.
- B. Both respond to antibiotics.
- C. Viral diseases respond to antibiotics; bacterial diseases do not.
- D. Bacterial diseases respond to antibiotics; viral diseases do not.

20. What is the function of valves in the heart?

- A. They separate the two ventricles.
- B. They prevent blood from flowing backward.
- C. They open between heartbeats.
- D. They help pump the blood.

21. Which is the correct pathway for pulmonary circulation?

- A. left ventricle-lungs-right atrium
- B. right ventricle-lungs-left atrium
- C. right ventricle-lungs-right atrium
- D. left atrium-lungs-left ventricle

22. Why must artery walls be thicker than vein walls?

- A. Valves in veins prevent pressure from building up.
- B. Blood is under greater pressure in arteries than in veins.
- C. Thick walls prevent blood from leaking out of arteries.
- D. Thick walls prevent blood from clotting.

23. What term describes the pressure on an artery wall when the left ventricle contracts?

- A. diastolic pressure
- B. blood pressure
- C. hypertension
- D. systolic pressure

24. What term describes the pressure on an artery wall when the left ventricle relaxes?

- A. diastolic pressure
- B. blood pressure
- C. hypertension
- D. systolic pressure

25. What term describes the measure of the force of blood pushing against artery walls?

- A. diastolic pressure
- B. blood pressure
- C. hypertension
- D. systolic pressure

26. What proteins, made by B cells, destroy pathogens?

- A. complement proteins
- B. antibodies
- C. interferons
- D. enzymes

27. What is the role of T cells in defense?

- A. They produce proteins that inactivate pathogens.
- B. They inject poison into parasites.
- C. They make chemicals that cause inflammation in the bloodstream.
- D. They destroy infected body cells.

28. What is the main difference between cellular immunity and humoral immunity?

- A. Antibodies are produced in cellular immunity.
- B. T cells do not play a role in humoral immunity.
- C. Phagocytes do not play a role in humoral immunity.
- D. Antibodies are produced in humoral immunity.

29. Why must donated tissue be analyzed before it is transplanted into another person?

- A. to prevent the recipient's body from attacking and rejecting the tissue as foreign
- B. to eliminate the introduction of pathogens into the recipient
- C. to prevent the recipient's red blood cells from clotting
- D. to prevent the formation of antigens in the donated tissue

30. How are antibiotics different from antiseptics?

- A. Antiseptics work in the body; antibiotics do not.
- B. Antibiotics target one type of pathogen; antiseptics are not specific.
- C. Antiseptics destroy the cell wall of pathogens; antibiotics destroy the cell membrane.
- D. Antiseptics prevent pathogens from reproducing; antibiotics kill pathogens.

31. Why has antibiotic resistance evolved in bacteria?

- A. The mutation rate of bacteria has increased.
- B. Antibiotics are not as effective as they once were.
- C. Bacteria no longer have cell walls.
- D. Use of antibiotics has become more common.

32. What is the function of a vaccine?

- A. to prevent an illness by causing a person to develop acquired immunity
- B. to kill pathogens
- C. to cure disease
- D. to produce cellular immunity

33. How does your body fight a pathogen if you have been vaccinated?

- A. Your memory B cells make antibodies right away.
- B. Your memory T cells make antibodies right away.
- C. Your memory B cells make antibiotics right away.
- D. Your memory T cells make antibiotics right away.

34. Why don't vaccines that are made of living cells cause disease?

- A. The pathogen's antigens have been removed.
- B. The pathogen has had its genetic material removed.
- C. The pathogen is attacked by memory B cells.
- D. The pathogen has been weakened.

Bonus! Where does blood go when it leaves the left ventricle?

- A. to the left atrium
- B. to the right ventricle
- C. to the lungs
- D. to the rest of the body