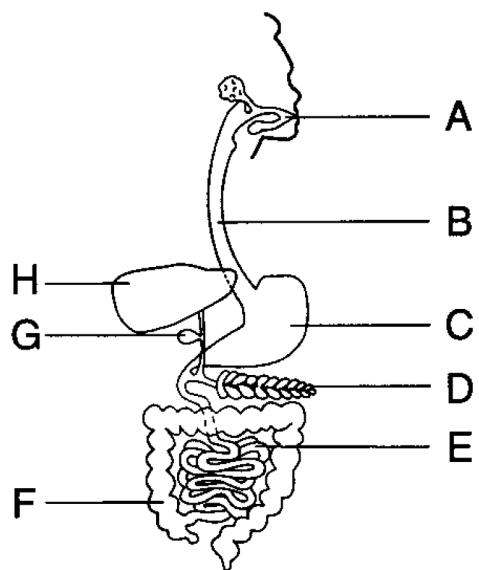


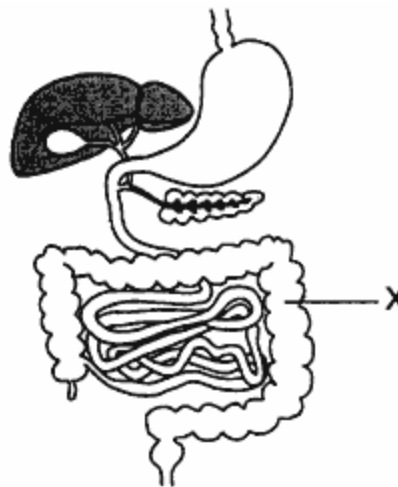
Body Systems Regents Review

1. Base your answer to the following question on "on the diagram below of the human digestive system and on your knowledge of biology.



From which structure are glucose and amino acids normally absorbed into the circulatory system?

- A) *F* B) *H* C) *C* D) *E*
-
2. Food is moved through the small intestine by a muscular process known as
- A) passive transport
B) phagocytosis
C) dehydration synthesis
D) peristalsis
3. The interaction of which two systems provides the molecules needed for the metabolic activity that takes place at ribosomes?
- A) digestive and circulatory
B) reproductive and excretory
C) immune and nervous
D) respiratory and muscular
4. Extensive damage to the large intestine would have the greatest effect on
- A) glucose metabolism
B) protein synthesis
C) enzyme secretion
D) water reabsorption
5. The diagram below represents a portion of the human body.



The principal function of structure *X* is to

- A) produce salivary enzymes
B) secrete sex hormones
C) absorb water
D) digest bile

6. In humans, structures that absorb most of the products of digestion are the

- A) ducts of the pancreas
- B) cells of the esophagus
- C) villi of the small intestine
- D) muscular folds of the gallbladder

7. Adult humans normally produce feces with low water content due to the activities of the

- A) large intestine B) small intestine
- C) stomach D) anus

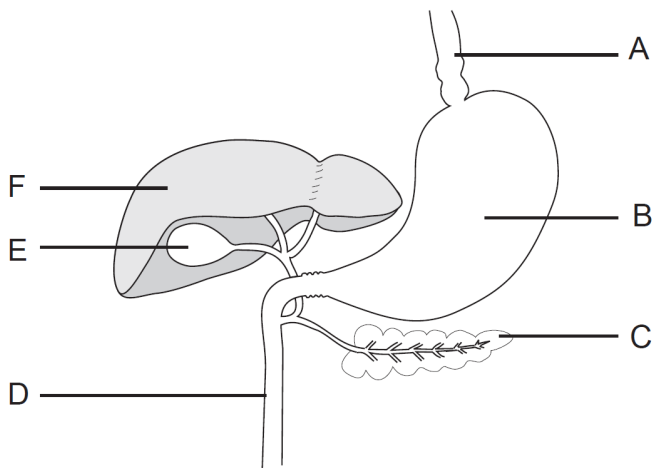
8. In which human digestive organ do proteases function?

- A) mouth B) esophagus
- C) gall bladder D) stomach

9. The digestion of starch begins in the

- A) mouth B) stomach
- C) gallbladder D) small intestine

10. Base your answer to the following question on "the diagram below.



"

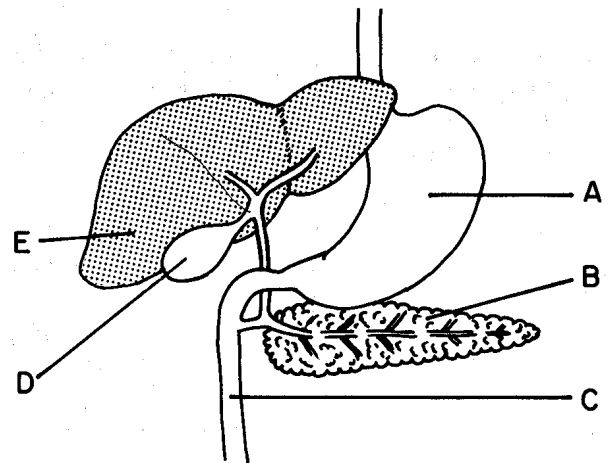
A digestive function of organ C is the synthesis and secretion of

- A) salivary amylase B) protease
- C) hydrochloric acid D) bile

11. Bile is a secretion which aids in the digestion of

- A) lipids B) proteins
- C) saccharides D) starches

12. Base your answer to the following question on the diagram below of some human digestive organs and on your knowledge of biology.



Which organ synthesizes both urea and bile?

- A) A B) E C) C D) D

13. After food enters the small intestine, lipases, proteases, and amylases are secreted into the small intestine by the

- A) liver B) gallbladder
- C) salivary glands D) pancreas

14. In humans, structures that release digestive secretions directly into the small intestine include both the

- A) salivary glands and the pancreas
- B) gall bladder and the lacteals
- C) villi and the salivary glands
- D) pancreas and the gall bladder

15. Which structure produces a substance that aids in the mechanical breakdown of fats?

- A) liver B) thyroid gland
- C) testes D) pituitary gland

16. Which type of food in the human diet provides the greatest amount of roughage per gram?

- A) lean meat B) green vegetables
- C) whole milk D) table sugar

17. Vitamin B₁ assists an organic catalyst in cell respiration. This vitamin functions as

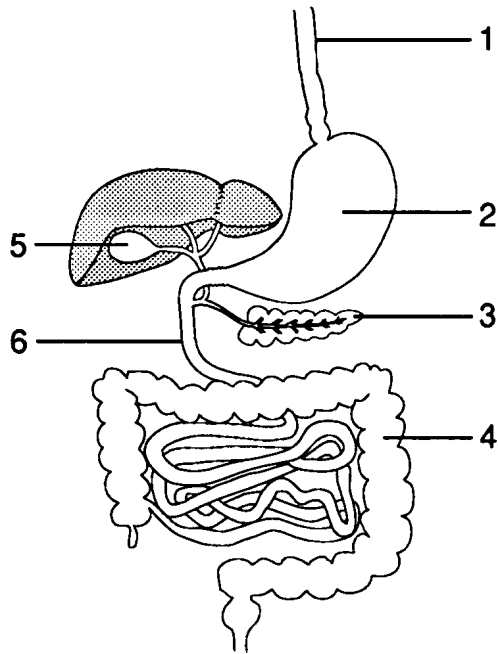
- A) a polypeptide
- B) a coenzyme
- C) a substrate
- D) an inorganic catalyst

18. The digestive system breaks carbohydrates down into simple sugars. This is important because
- A) Sugars are required to maintain the structure of the cell
 - B) Simple sugars are not required by the brain
 - C) Simple sugars are required for metabolism
 - D) Sugars are responsible for all cellular communication in the body

19. A source of roughage in the human diet is supplied by certain
- A) saturated lipids
 - B) complete proteins
 - C) complex carbohydrates
 - D) nucleic acids

20. Which foods should be included in a balanced diet as a good source of roughage?
- A) red meat and poultry
 - B) fresh fruits and vegetables
 - C) eggs and milk products
 - D) animal fat and plant oil

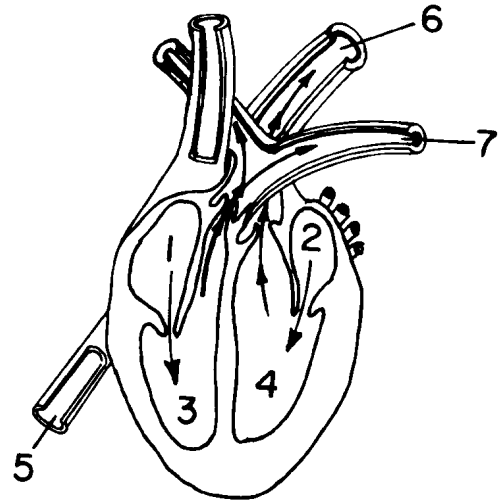
21. Base your answer to the following question on select the organ, *chosen from the diagram below*, that is most closely related to that malfunction.



Too much unabsorbed water in this organ results in diarrhea.

- A) 1
- B) 2
- C) 3
- D) 4

22. A disorder of the digestive system that can cause severe dehydration is known as
- A) appendicitis
 - B) gallstones
 - C) constipation
 - D) diarrhea
23. Hardened deposits of cholesterol that accumulate in the structure that stores bile are known as
- A) gallstones
 - B) ulcers
 - C) goiters
 - D) allergies
24. Base your answer to the following question on the diagram of the adult human heart and on your knowledge of biology.

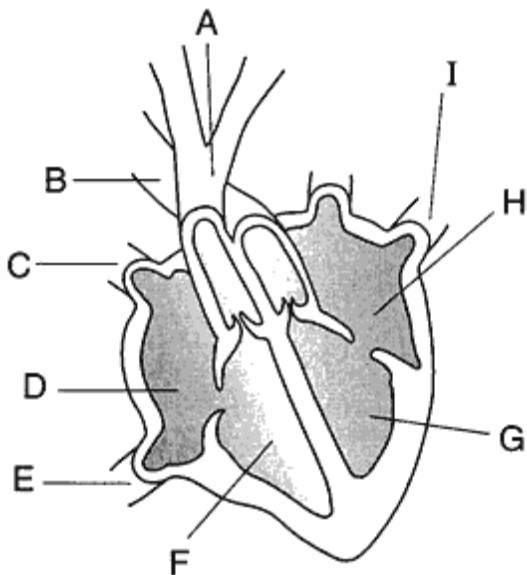


Which number indicates the receiving chamber for blood returning from a kidney?

- A) 1
- B) 2
- C) 3
- D) 4

25. In the human heart, the muscular structure of the ventricles enables them to
- A) pump blood a greater distance than atria can
 - B) carry only oxygenated blood
 - C) carry only deoxygenated blood
 - D) pump blood directly into the atria
26. For blood to pass through the heart from the left atrium to the left ventricle, it must *first* pass through
- A) an artery
 - B) a valve
 - C) a vein
 - D) a capillary
27. Which organ system in humans is most directly involved in the transport of oxygen?
- A) digestive
 - B) nervous
 - C) excretory
 - D) circulatory

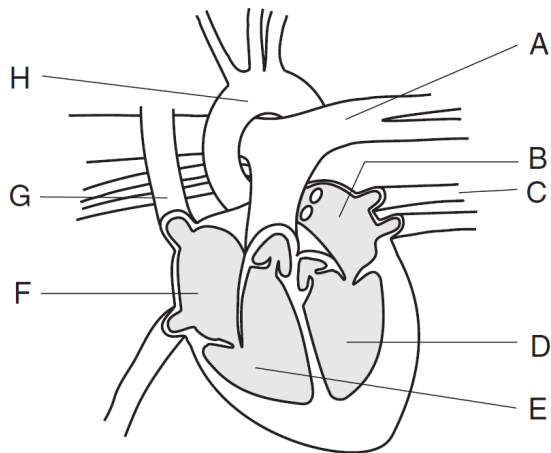
28. Which statement most accurately describes the human heart?
- It has two atria and one ventricle, and it pumps blood directly into veins.
 - It has one atrium and one ventricle, and it is composed of cardiac muscle.
 - It has one atrium and two ventricles, and it is composed of visceral muscle.
 - It has two atria and two ventricles, and it pumps blood directly into arteries.
29. Base your answer to the following question on the diagram below of the human heart and on your knowledge of biology.



Which sequence represents normal blood flow between the two sides of the heart?

- $A \rightarrow F \rightarrow D \rightarrow C \rightarrow B$
 - $B \rightarrow G \rightarrow H \rightarrow I \rightarrow C$
 - $C \rightarrow D \rightarrow F \rightarrow A \rightarrow I$
 - $D \rightarrow E \rightarrow I \rightarrow H \rightarrow G$
30. To determine heart rate, a student should count the pulsations per minute in
- a vein
 - a capillary
 - an artery
 - a lymph vessel
31. The concentration of oxygen is highest in the blood flowing through the
- superior vena cava
 - inferior vena cava
 - pulmonary vein
 - pulmonary artery
32. Which situation indicates a serious organ system malfunction?
- The ovary releases estrogen, which quickly binds to cell receptors.
 - Blood flow throughout the entire body is suddenly reduced.
 - White blood cells release enzymes in response to the proteins on inhaled pollen.
 - Mitochondria stop functioning in a unicellular organism exposed to pollutants
33. The flow of blood to and from the lungs is referred to as
- pulmonary circulation
 - systemic circulation
 - autonomic circulation
 - somatic circulation
34. Pulmonary circulation is described as
- blood moving to and from the brain
 - blood moving to and from the lungs
 - worn-out red blood cells being removed by the liver
 - intercellular fluid passing through lymph vessels
35. Which body system is correctly paired with its function?
- excretory—produces antibodies to fight disease-causing organisms
 - digestive—produces hormones for storage and insulation
 - circulatory—transports materials for energy release in body cells
 - respiratory—collects waste material for digestion
36. The cytoplasm in a cell carries out a function similar to a function of which human system?
- respiratory system
 - reproductive system
 - circulatory system
 - nervous system
37. Which type of vessel normally contains valves that prevent the backward flow of materials?
- artery
 - arteriole
 - capillary
 - vein

Base your answers to questions 38 and 39 on " the diagram below of the human heart and on your knowledge of biology.



38. Systolic pressure is most directly related to the contraction of
 A) A B) F C) G D) D
39. Which statement best describes the blood pumped from the structure labeled E?
 A) It is deoxygenated and will be transported to the lungs.
 B) It is oxygenated and will be transported to the brain.
 C) It is deoxygenated and will be transported to the skin.
 D) It is oxygenated and will be transported to the right atrium.

Base your answers to questions 40 and 41 on the circulation system list below. Choose the circulation that best describes the below statement.

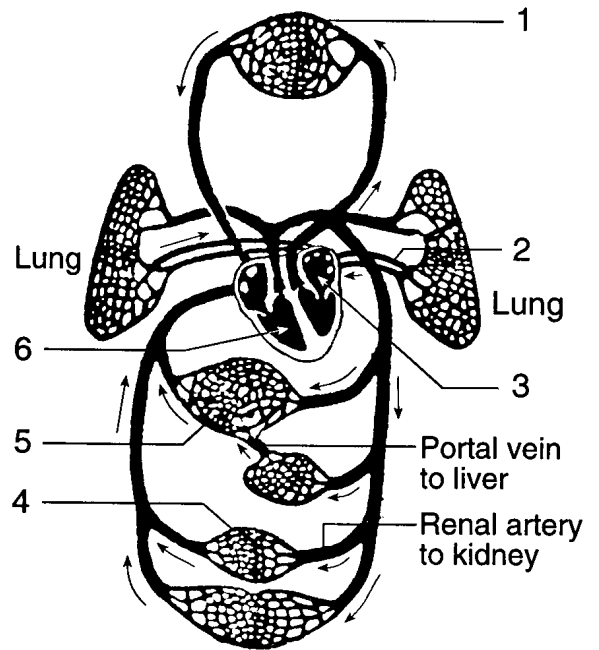
Circulation

- (1) Pulmonary circulation
- (2) Systemic circulation
- (3) Coronary circulation
- (4) Lymphatic circulation

40. Oxygen is delivered to the liver from the heart.
 A) 1 B) 2 C) 3 D) 4
41. The concentration of carbon dioxide in the blood decreases, and the concentration of oxygen increases.
 A) 1 B) 2 C) 3 D) 4

42. Base your answer to the following question on the diagram below and on your knowledge of biology.

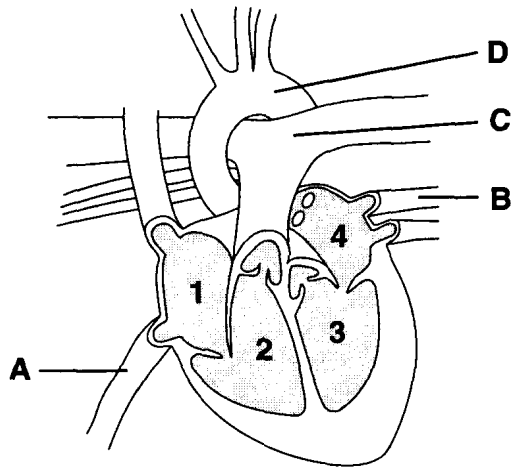
Human Circulatory Pathways



In which region does the blood leaving the region have a lower concentration of urea than the blood entering that same region?

- A) 1 B) 5 C) 6 D) 4

Base your answers to questions 43 and 44 on the diagram below of the human heart.



43. Deoxygenated blood from the body is returned to the heart by way of structure

- A) A B) B C) C D) D

44. Which heart chamber pumps blood toward the alveoli by way of the pulmonary arteries?

- A) 1 B) 2 C) 3 D) 4

45. In a human, the transport of blood between the heart and lungs is known as

- A) systemic circulation
 B) coronary circulation
 C) lymphatic circulation
 D) pulmonary circulation

46. Veins are blood vessels that

- A) deliver blood to the cells of the body
 B) contain striated muscle
 C) carry blood toward the heart
 D) readily exchange materials between the blood and body cells

47. Exchange of soluble compounds, gases, and wastes through the intercellular fluid occurs between cells and

- A) valves B) capillaries
 C) veins D) arteries

48. The thick, muscular vessels that transport blood away from the heart are the

- A) atria B) arteries
 C) veins D) ventricles

49. The diagrams below represent cross sections of vessels found in the human circulatory system.

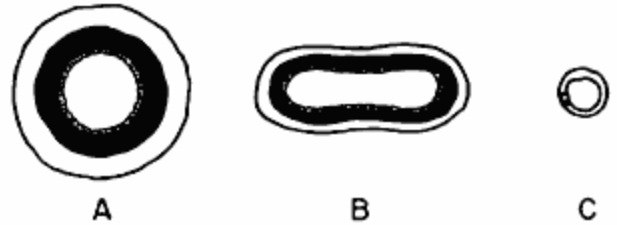


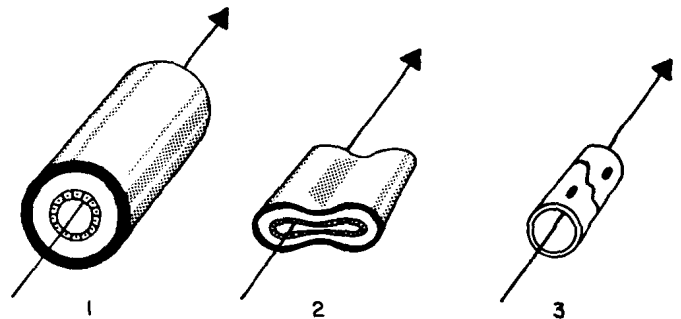
Diagram A most likely represents

- A) vein B) a lymph vessel
 C) a capillary D) an artery

50. The movement of blood from the legs toward the heart is hindered by gravity. The effect of gravity is counteracted by

- A) smooth muscle in the capillaries
 B) cilia lining the blood vessels
 C) valves in the veins
 D) lymph nodes near major vessels

Base your answers to questions 51 through 53 on the diagrams below which represent three common types of blood vessels and on your knowledge of biology.



51. Which vessel would normally contain the highest systolic and diastolic blood pressure?

- A) 1 B) 2 C) 3

52. Which vessel contains valves and transports blood back to the heart?

- A) 1 B) 2 C) 3

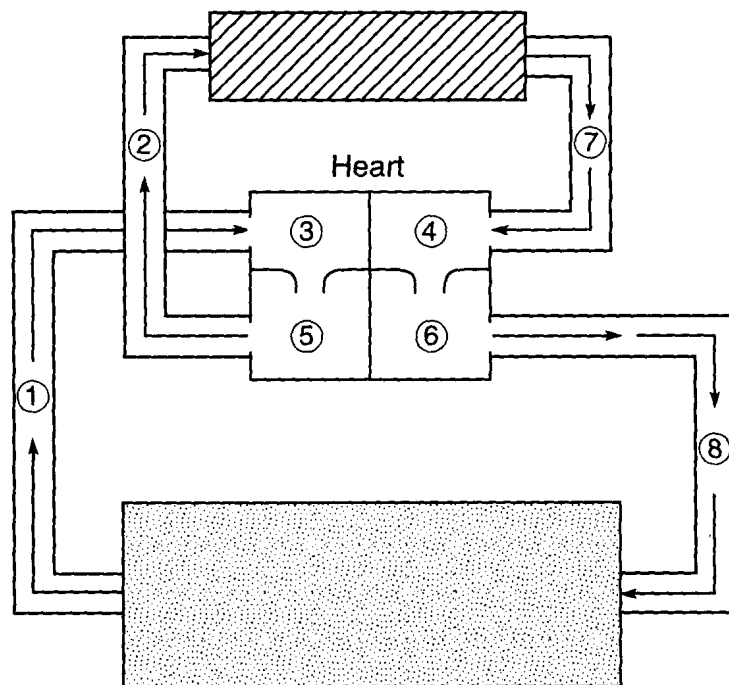
53. Through the walls of which vessel does gas exchange occur?

- A) 1 B) 2 C) 3

54. The nephron is the structural unit of the human

- A) lung B) liver
 C) kidney D) intestine

Base your answers to questions 55 and 56 on the diagram below, which represents the pathway of blood throughout the body, and on your knowledge of biology.



55. Which sequence correctly represents blood flow known as pulmonary circulation?

- A) 4→6→2→7 B) 5→2→7→4 C) 6→8→1→3 D) 3→5→8→1

56. Which structure carries oxygenated blood to the body?

- A) 1 B) 2 C) 7 D) 8

57. The *lack* of which blood component interferes most with the transport of oxygen in humans?

- A) white blood cells B) red blood cells
C) platelets D) antibodies

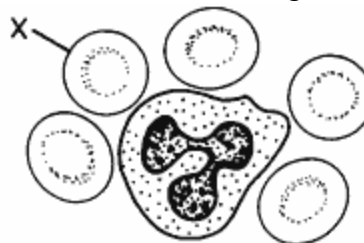
58. A series of enzyme-controlled reactions that occur when platelets rupture is known as

- A) passive immunity B) blood clotting
C) asthma D) anemia

59. Cells of the human body are surrounded by intercellular fluid (ICF), which is derived from

- A) hemoglobin
B) blood plasma
C) white blood cells
D) nitrogenous wastes

60. The diagram below represents several human blood cells as observed through a compound microscope.



Which function is associated with cell X?

- A) antibody production
B) oxygen transport
C) phagocytosis
D) peristalsis

61. The liquid that is derived from human blood plasma and is in direct contact with the cells of the body is known as

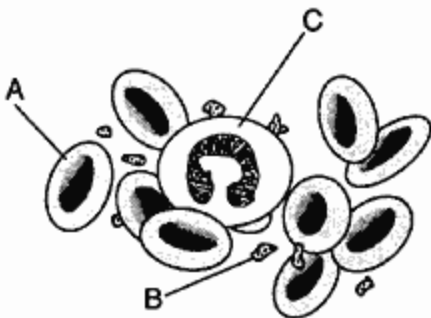
- A) bile B) cytoplasm
C) intercellular fluid D) whole blood

62. Which row in the chart below correctly represents substances found in the blood and intercellular fluid (ICF) of humans?

	CO ₂	O ₂	Red Blood Cells	White Blood Cells
Row 1	I	B	B, I	
Row 2	B	B, I		B
Row 3	B, I	B, I	B	B, I
Row 4	B, I	I	B	I

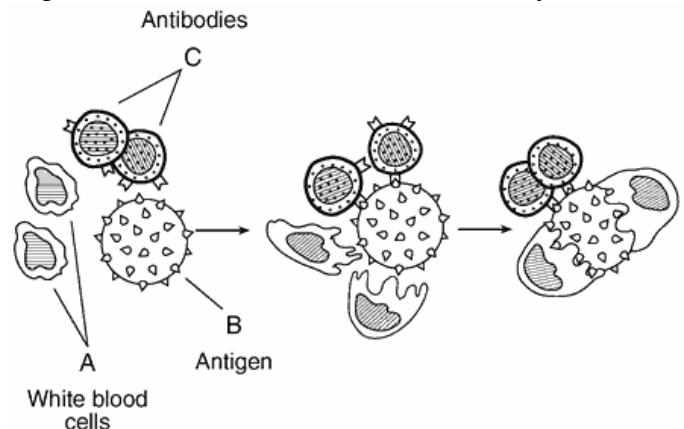
Key: B = substance present in blood
I = substance present in ICF

- A) 1 B) 2 C) 3 D) 4
63. Which part of the blood is correctly paired with its function?
- A) red blood cells – fight infection
B) plasma – transports wastes and hormones
C) platelets – produce antibodies
D) white blood cells – carry oxygen
64. The synthesis of fibrin is controlled directly by
- A) enzymes present in the blood
B) hormones secreted by the pituitary gland
C) neurons in the medulla of the brain
D) phagocytic cells within the intercellular fluid
65. Which statement correctly describes the activities of the components of human blood shown in the diagram below?



- A) Both A and B function in immune responses, and C transports oxygen.
B) A, B, and C are able to synthesize hemoglobin.
C) Both B and C provide immunity, and A transports nutrients.
D) A transports oxygen, B initiates clots, and C functions in immune responses.

66. What is a major difference between red blood cells and white blood cells?
- A) Red blood cells contain hemoglobin, but white blood cells do not.
B) Red blood cells can move, but white blood cells cannot.
C) Red blood cells contain nuclei, but white blood cells do not.
D) Red blood cells engulf foreign bacteria, but white blood cells do not.
67. Hemoglobin is found in the blood of humans and earthworms, but not in the blood of grasshoppers. Which conclusion is best supported by this statement?
- A) The human and the earthworm have lungs, but the grasshopper does not have lungs.
B) The human and the earthworm transport far more oxygen with their blood than the grasshopper transports with its blood.
C) The human and the earthworm have open circulatory systems, but the grasshopper has a closed circulatory system.
D) The human and the earthworm are adapted for anaerobic respiration, but the grasshopper is adapted for aerobic respiration.
68. The diagram below represents one possible immune response that can occur in the human body.



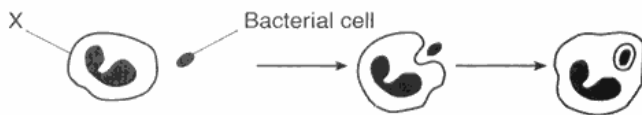
The structures that are part of the immune system are represented by

- A) A, only B) A and C, only
C) B and C, only D) A, B, and C

69. Maintenance of proper levels of intercellular fluid is most closely associated with

- A) pulmonary circulation
- B) coronary circulation
- C) lymphatic circulation
- D) systemic circulation

70. The diagram below shows a cell in the human body engulfing a bacterial cell.



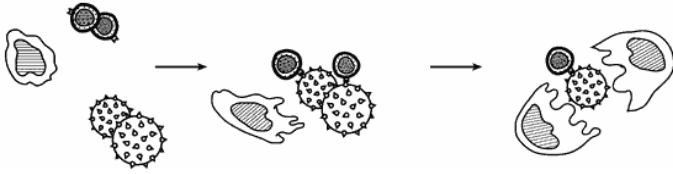
The cell labeled *X* is most likely a

- A) red blood cell
 - B) white blood cell
 - C) liver cell
 - D) nerve cell
71. To receive necessary nutrients and eliminate wastes, all human body cells must be
- A) surrounded by cilia
 - B) endocrine in nature
 - C) able to carry on phagocytosis
 - D) surrounded by a transport medium
72. A researcher needs information on antigen–antibody reactions. Searching for which phrase would best lead the researcher to information about these reactions?
- A) protein synthesis
 - B) energy sources in nature
 - C) white blood cell activity
 - D) DNA replication
73. In humans, excess fluid and other substances surrounding the cells are returned to the blood by
- A) lymphocytes
 - B) arteries
 - C) platelets
 - D) lymph vessels
74. A function of white blood cells is to
- A) transport oxygen to body cells
 - B) produce hormones that regulate cell communication
 - C) carry glucose to body cells
 - D) protect the body against pathogens

75. A part of the Hepatitis B virus is synthesized in the laboratory. This viral particle can be identified by the immune system as a foreign material but the viral particle is not capable of causing disease. Immediately after this viral particle is injected into a human it

- A) stimulates the production of enzymes that are able to digest the Hepatitis B virus
 - B) triggers the formation of antibodies that protect against the Hepatitis B virus
 - C) synthesizes specific hormones that provide immunity against the Hepatitis B virus
 - D) breaks down key receptor molecules so that the Hepatitis B virus can enter body cells
76. When a new viral infection appears in a population, scientists usually try to develop a vaccine against the virus. Which substances would most likely be contained in the new vaccine?
- A) live bacteria that ingest viruses
 - B) white blood cells from an infected individual
 - C) weakened viruses associated with the infection
 - D) a variety of microbes that will attack the virus
77. An injection containing weakened forms of a disease-causing organism will usually trigger
- A) absorption of histamines throughout the body
 - B) secretion of antigens by lymphocytes
 - C) production of temporary resistance to the disease
 - D) production of antibodies providing active immunity
78. People who receive organ transplants sometimes produce antibodies in response to foreign proteins present in the organ of the donor. This reaction is an example of
- A) regeneration
 - B) clotting
 - C) rejection
 - D) deamination
79. The virus that causes AIDS is damaging to the body because it
- A) targets cells that fight invading microbes
 - B) attacks specific red blood cells
 - C) causes an abnormally high insulin level
 - D) prevents the normal transmission of nerve impulses

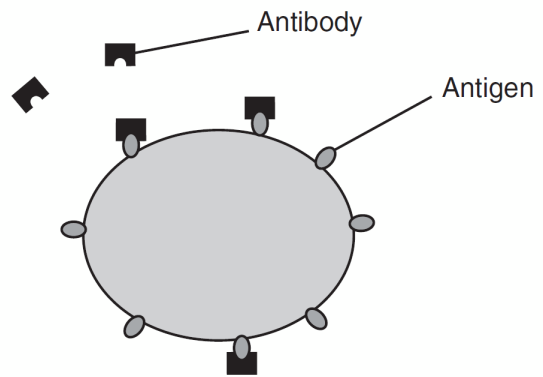
80. The diagram below represents what can happen when homeostasis in an organism is threatened.



Which statement provides a possible explanation for these events?

- A) Antibiotics break down harmful substances by the process of digestion.
 - B) Some specialized cells mark and other cells engulf microbes during immune reactions.
 - C) Embryonic development of essential organs occurs during pregnancy.
 - D) Cloning removes abnormal cells produced during differentiation.
81. Which disease damages the human immune system, leaving the body open to certain infectious agents?
- A) flu
 - B) AIDS
 - C) chicken pox
 - D) pneumonia
82. An individual who has had chicken pox rarely gets this disease again. This situation is an example of
- A) biological control
 - B) negative feedback
 - C) active immunity
 - D) passive immunity
83. Microbes that enter the body, causing disease, are known as
- A) pathogens
 - B) antibodies
 - C) enzymes
 - D) hosts
84. Blood can be tested to determine the presence of the virus associated with the development of AIDS. This blood test is used directly for
- A) cure
 - B) treatment
 - C) diagnosis
 - D) prevention
85. When humans exhale, air passes from the trachea directly into the
- A) bronchioles
 - B) alveoli
 - C) bronchi
 - D) pharynx

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



This activity helps to

- A) provide protection against pathogens
 - B) produce antibiotics to control disease
 - C) eliminate harmful gene alterations
 - D) regulate production of ATP by the cell
87. A 6-year-old child ate a peanut butter sandwich at snack time in school. Five minutes later, her throat became swollen and she collapsed. This allergic reaction occurred because her body
- A) recognized an antigen in peanut butter and produced antibiotics against it
 - B) digested the white blood cells that can recognize an antigen in peanut butter
 - C) did not recognize an antigen in peanut butter and could not produce antibodies against it
 - D) recognized an antigen in peanut butter and produced an immune response
88. What will most likely happen when food is in the trachea?
- A) The food will interfere with the passage of air to the alveoli.
 - B) The food will undergo emulsification and deamination.
 - C) The food will be moved down to the stomach by peristalsis.
 - D) The food will be completely digested as a result of enzyme action.
89. The human trachea is a passageway that remains open due to the presence of
- A) bones
 - B) ligaments
 - C) skeletal muscles
 - D) cartilaginous rings

90. Which statement best describes the function of the respiratory passageways of a human?

- A) They permit digestive end-products to make contact with body cells.
- B) They permit exchange between the external atmosphere and the circulatory system.
- C) They transport gaseous cellular wastes from body cells to the lungs for excretion.
- D) They regulate the amount of ammonia and salt dissolved in body fluids.

91. Which statement best describes the human respiratory system?

- A) It is composed of a network of moist passageways that permit air to flow from the external environment to the lungs.
- B) Each cell of the human body is in direct contact with the external environment, and gas exchange occurs by diffusion.
- C) The external body surface is kept moist to allow for gas exchange.
- D) Gases diffuse across membranes on both the external and internal surfaces of the body.

92. In humans, which structure prevents food from entering the trachea?

- A) epiglottis
- B) alveolus
- C) mucous membrane
- D) cartilage ring

93. Which structure in humans is lined with ciliated mucous membrane, is supported by cartilaginous rings, and functions as a passageway for air?

- A) esophagus B) alveolus
- C) pharynx D) trachea

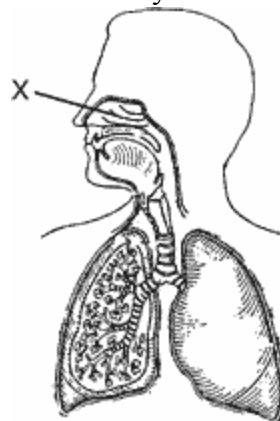
94. Which structures in the nasal cavity remove some bacteria and dust from outside air before it enters the lungs?

- A) rings of cartilage
- B) lymph nodes
- C) thin, moist alveoli
- D) ciliated mucous membranes

95. A humidifier is a device that adds moisture to dry air. Which part of the human respiratory system has the same function?

- A) nasal cavity B) epiglottis
- C) diaphragm D) cartilage rings

96. Which statement best describes the structure indicated by letter X in the diagram below?



- A) It is kept open by rings of cartilage.
- B) It is lined with a mucous membrane that filters, moistens, and warms the air.
- C) It is made up of alveoli.
- D) It contains ciliated bronchioles to filter the incoming air.

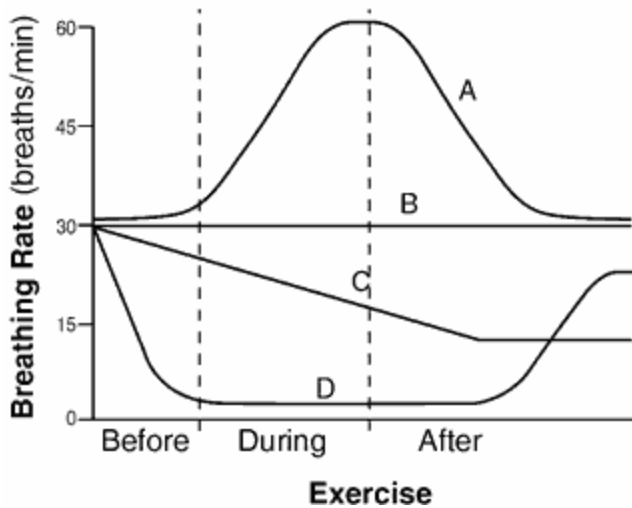
97. In humans, the thin, moist membranes of the alveoli are surrounded by

- A) bronchi B) the epiglottis
- C) capillaries D) lymph vessels

98. In humans, what happens when the breathing rate increases?

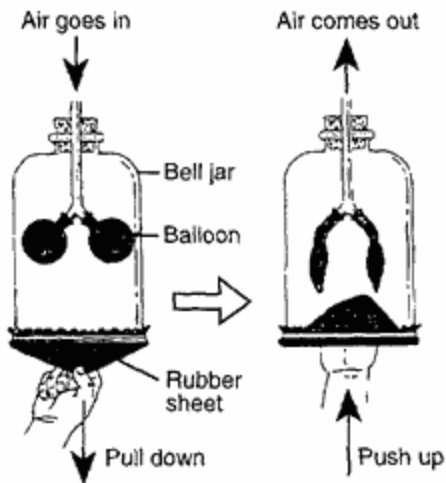
- A) Additional oxygen will diffuse into the blood as carbon dioxide diffuses out of the blood in the lungs.
- B) Additional carbon dioxide will diffuse into the blood as oxygen diffuses out of the blood in the lungs.
- C) Oxygen from body cells will diffuse more rapidly into red blood cells.
- D) Increased oxygen dissolved in the blood will stimulate the cerebrum to slow the breathing rate.

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



- A) A B) B C) C D) D

100. The diagram below represents a demonstration of the breathing process in humans. The balloons represent lungs.



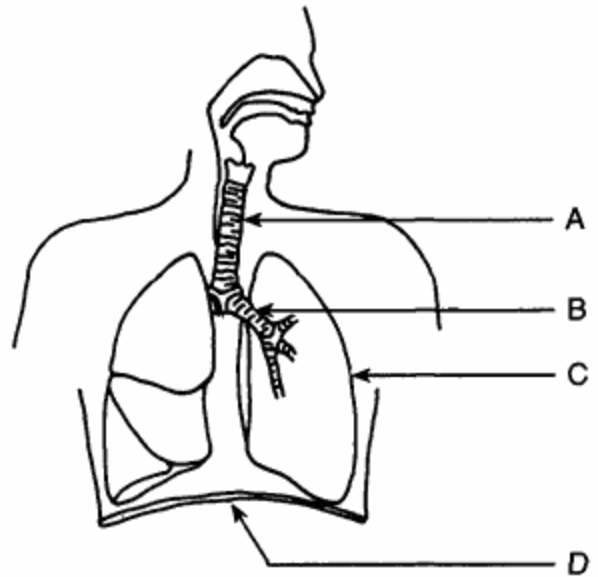
The change in the balloons is brought about by

- A) a change in air composition outside the bell jar
 B) a change in air pressure inside the bell jar
 C) an expansion of the balloons, which pulls the rubber sheet into the bell jar
 D) a contraction of the balloons, which forces air into the bell jar

101. What is the main function of gas exchange

- A) To remove carbon dioxide and supply oxygen to the body
 B) To remove oxygen from the body
 C) To supply carbon dioxide and remove oxygen from the body
 D) To supply water to the body cells

102. Which structure shown in the diagram below contracts, causing a pressure change in the chest cavity during breathing?



- A) A B) B C) C D) D

103. Which body structures have walls one cell thick?

- A) veins and arteries
 B) trachea and bronchi
 C) capillaries and alveoli
 D) lymph vessels and stomach

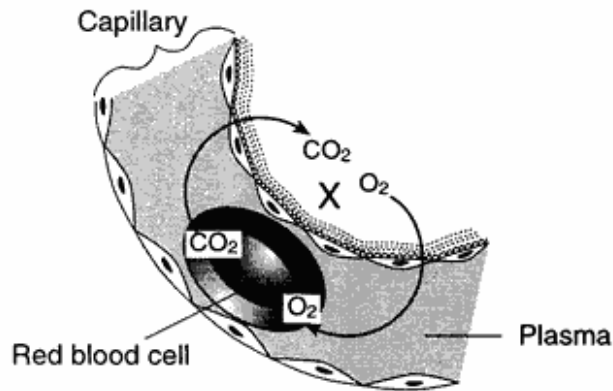
104. In vertebrates, organs adapted for respiratory gas exchange are characterized by the

- A) lack of blood vessels
 B) presence of villi
 C) presence of many capillaries
 D) lack of cell membranes

105. An increase in breathing rate can be triggered by an increase in the

- A) carbon dioxide content of the blood
 B) oxygen content of the atmosphere
 C) number of platelets in the blood
 D) number of red blood cells

106. The diagram below represents part of a capillary in a specific region of the human body.



The region labeled *X* represents part of

- A) a glomerulus
- B) an alveolus
- C) a villus
- D) the liver

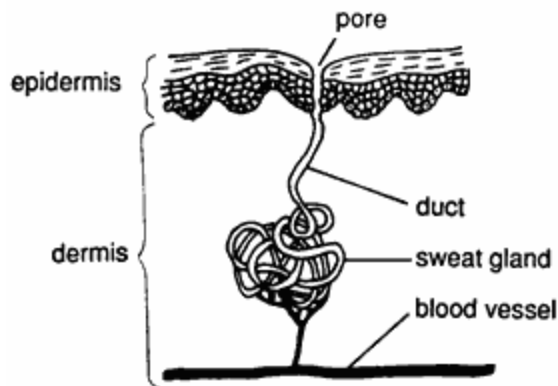
107. Which human excretory organ breaks down red blood cells and synthesizes urea?

- A) lung
- B) kidney
- C) skin
- D) liver

108. The principal function of perspiration is to

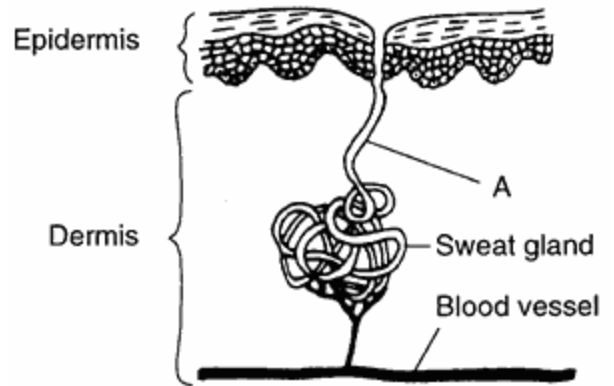
- A) regulate hormone secretion
- B) remove oils from the surface of the skin
- C) deposit antibodies on the surface of the skin
- D) regulate body temperature

109. What is a major function of the blood vessel represented in the diagram below?



- A) releasing carbon dioxide into the sweat gland
- B) transporting oxygen away from the sweat gland
- C) transporting wastes to the sweat gland
- D) filtering starch out of the sweat gland

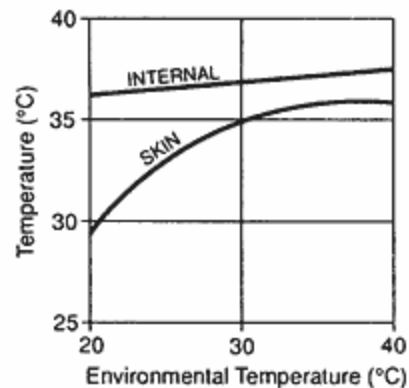
110. The diagram below illustrates some structures of the skin



A substance that blocks structure *A* would directly interfere with

- A) cellular respiration
- B) storage of urea
- C) dehydration synthesis
- D) temperature regulation

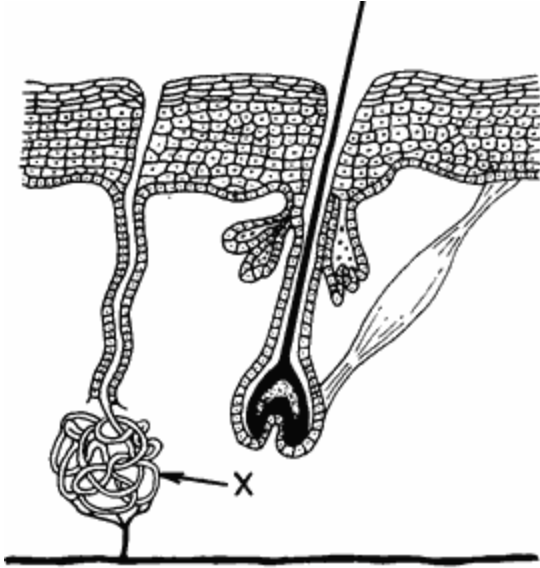
111. The graph below shows the effect of environmental temperature on a girl's skin temperature and on her internal body temperature.



Which statement best describes what happens as environmental temperature increases from 20°C to 30°C?

- A) Both the internal and the skin temperatures reach 40°C.
- B) Both the internal and the skin temperatures increase by about 7°C.
- C) The skin temperature decreases to about 30°C.
- D) The internal temperature increases by about 1°C.

112. The diagram below shows a section of human skin.



Structure *X* represents a

- A) nephron
- B) nephridium
- C) sweat gland
- D) Malpighian tubule

113. The excretory system is responsible for moving toxic wastes, dissolved molecules, and excess heat. You would conclude that the excretory system contributes to

- A) circulating molecules around the body
- B) maintaining dynamic equilibrium in the body
- C) producing egg and sperm cells in the body
- D) gas exchange

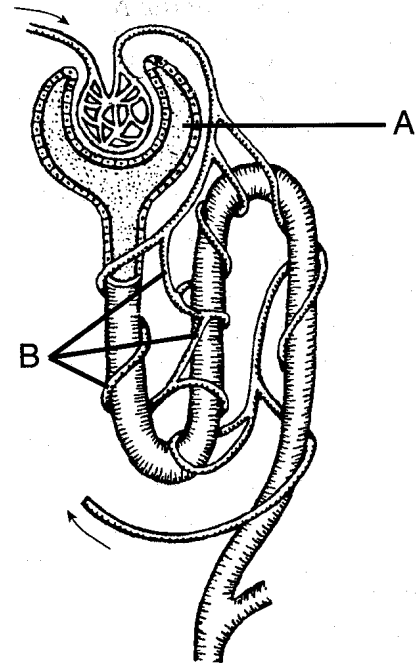
114. The excretory system is responsible for removing all of the following from the body except

- A) toxic wastes
- B) gaseous waste
- C) dissolved molecules
- D) cells

115. In humans, the ureter transports urine from the

- A) blood to the kidney
- B) liver to the kidney
- C) kidney to the urinary bladder
- D) urinary bladder to outside the body

116. Base your answer to the following question on the diagram below and on your knowledge of biology.



Letter *A* indicates a structure known as

- A) the ureter
- B) a glomerulus
- C) an artery
- D) a Bowman's capsule

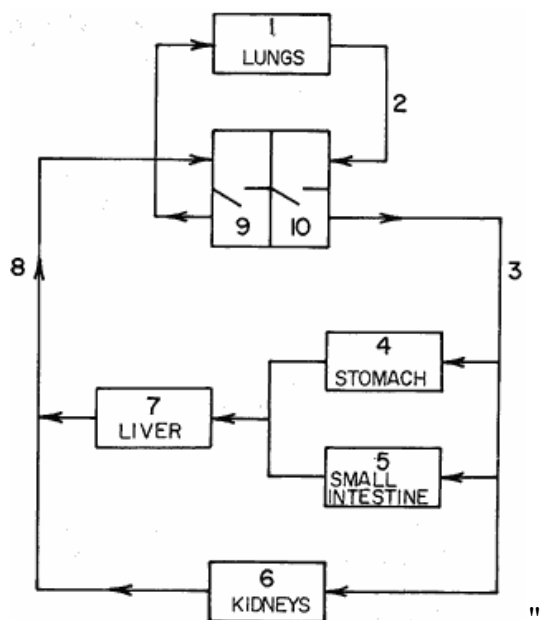
117. During a long-distance run on a hot day, an athlete produces large quantities of sweat. As a result, the kidneys change the rate of urine production. Why is this change important?

- A) Decreased urine production increases the amino acids in the blood.
- B) Increased urine production removes amino acids produced as a result of running.
- C) Decreased urine production allows the body to conserve water.
- D) Increased urine production allows more water to remain in the bloodstream.

118. As urine is excreted, muscle contractions of the urinary bladder will cause the urine to pass into the

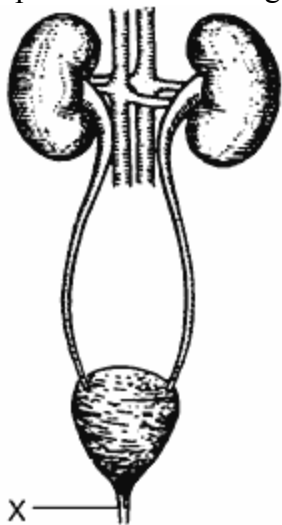
- A) ureter
- B) glomerulus
- C) urethra
- D) Bowman's capsule

119. Base your answer to the following question on " the diagram below which represents the pathway of the blood throughout the body.



Within which structure does reabsorption of sodium and chloride ions occur?

- A) 6 B) 8 C) 3 D) 9
120. What is the principal function of structure *X* represented in the diagram below?



- A) filtration of cellular wastes from the blood
 B) transport of urine out of the body
 C) storage of urine
 D) secretion of hormones

121. A disorder that causes narrowing of the urethra would interfere most directly with the

- A) release of bile from the gallbladder
 B) maturation of gametes in the gonads
 C) release of fluid from the urinary bladder
 D) pumping of blood out of the heart

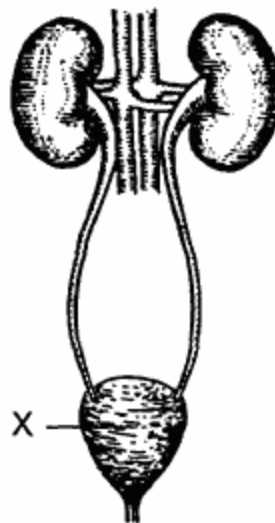
122. After reabsorption in nephrons is completed, the fluid that is left in the tubules is transported to the

- A) Bowman's capsule
 B) circulatory system
 C) urinary bladder
 D) bile duct

123. The correct pathway for urine to flow out of the human body is

- A) bladder → ureter → kidney → urethra
 B) kidney → ureter → bladder → urethra
 C) urethra → bladder → kidney → ureter
 D) kidney → urethra → bladder → ureter

124. What is the principal function of the excretory structure indicated by letter *X* in the diagram below?

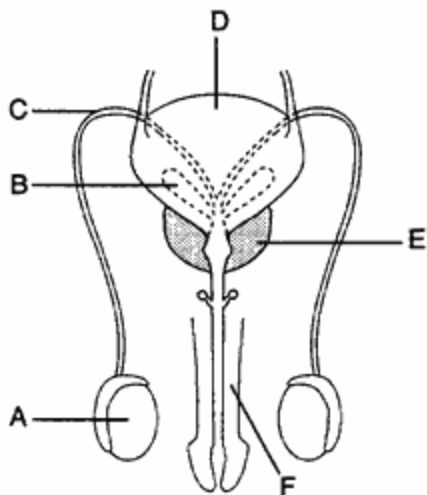


- A) reabsorption B) filtration
 C) storage D) egestion

125. Which structure is correctly paired with its function?

- A) urethra—eliminates urine from the bladder
 B) neuron—filters the blood
 C) ventricle—pumps blood directly into atria
 D) liver—produces intestinal amylase

126. Base your answer to the following question on "the diagram below."



Which letter indicates a structure that is *not* involved in the production or delivery of gametes?

- A) A B) B C) C D) D E) F

127. In humans, the immediate result of a blockage in one ureter would be to

- A) limit the ability to store urine
 B) prevent filtration of the blood
 C) stop the release of urine from the body
 D) decrease the amount of urine entering the bladder

128. What is the main function of a nephron?

- A) It breaks down red blood cells to form nitrogenous wastes.
 B) It regulates the chemical composition of the blood.
 C) It forms urea from the waste products of protein metabolism.
 D) It absorbs digested food from the contents of the small intestine.

129. In humans, which substances are normally filtered out of the blood by the nephrons and then excreted?

- A) water, carbon dioxide, and glucose
 B) urea, water, and mineral salts
 C) water, glycogen, and urea
 D) glucose, water, and red blood cells

130. The presence of large numbers of mitochondria in the tubule cells of nephrons suggests that the transport of materials into and out of tubule cells requires

- A) acids B) pigments
 C) energy D) enzymes

131. The diagram below represents a nephron.



Which process takes place in region A?

- A) Proteins are converted to urea.
 B) Substances are filtered out of the glomerulus.
 C) Urine is stored temporarily.
 D) Water is reabsorbed into the blood.

132. State *one* way white blood cells protect the body from foreign microbes.

133. State *one* specific way white blood cells help to protect the human body from pathogens.

Answer Key
Body Systems Review

- | | | | |
|--------------|--------------|---------------|---------------------|
| 1. <u>D</u> | 37. <u>D</u> | 73. <u>D</u> | 109. <u>C</u> |
| 2. <u>D</u> | 38. <u>D</u> | 74. <u>D</u> | 110. <u>D</u> |
| 3. <u>A</u> | 39. <u>A</u> | 75. <u>B</u> | 111. <u>D</u> |
| 4. <u>D</u> | 40. <u>B</u> | 76. <u>C</u> | 112. <u>C</u> |
| 5. <u>C</u> | 41. <u>A</u> | 77. <u>D</u> | 113. <u>B</u> |
| 6. <u>C</u> | 42. <u>D</u> | 78. <u>C</u> | 114. <u>D</u> |
| 7. <u>A</u> | 43. <u>A</u> | 79. <u>A</u> | 115. <u>C</u> |
| 8. <u>D</u> | 44. <u>B</u> | 80. <u>B</u> | 116. <u>D</u> |
| 9. <u>A</u> | 45. <u>D</u> | 81. <u>B</u> | 117. <u>C</u> |
| 10. <u>B</u> | 46. <u>C</u> | 82. <u>C</u> | 118. <u>C</u> |
| 11. <u>A</u> | 47. <u>B</u> | 83. <u>A</u> | 119. <u>A</u> |
| 12. <u>B</u> | 48. <u>B</u> | 84. <u>C</u> | 120. <u>B</u> |
| 13. <u>D</u> | 49. <u>D</u> | 85. <u>D</u> | 121. <u>C</u> |
| 14. <u>D</u> | 50. <u>C</u> | 86. <u>A</u> | 122. <u>C</u> |
| 15. <u>A</u> | 51. <u>A</u> | 87. <u>D</u> | 123. <u>B</u> |
| 16. <u>B</u> | 52. <u>B</u> | 88. <u>A</u> | 124. <u>C</u> |
| 17. <u>B</u> | 53. <u>C</u> | 89. <u>D</u> | 125. <u>A</u> |
| 18. <u>C</u> | 54. <u>C</u> | 90. <u>B</u> | 126. <u>D</u> |
| 19. <u>C</u> | 55. <u>B</u> | 91. <u>A</u> | 127. <u>D</u> |
| 20. <u>B</u> | 56. <u>D</u> | 92. <u>A</u> | 128. <u>B</u> |
| 21. <u>D</u> | 57. <u>B</u> | 93. <u>D</u> | 129. <u>B</u> |
| 22. <u>D</u> | 58. <u>B</u> | 94. <u>D</u> | 130. <u>C</u> |
| 23. <u>A</u> | 59. <u>B</u> | 95. <u>A</u> | 131. <u>B</u> |
| 24. <u>A</u> | 60. <u>B</u> | 96. <u>B</u> | 132. — They engulf |
| 25. <u>A</u> | 61. <u>C</u> | 97. <u>C</u> | pathogens. — They |
| 26. <u>B</u> | 62. <u>C</u> | 98. <u>A</u> | produce antibodies. |
| 27. <u>D</u> | 63. <u>B</u> | 99. <u>A</u> | — They mark |
| 28. <u>D</u> | 64. <u>A</u> | 100. <u>B</u> | invaders for |
| 29. <u>C</u> | 65. <u>D</u> | 101. <u>A</u> | destruction. — They |
| 30. <u>C</u> | 66. <u>A</u> | 102. <u>D</u> | remember antigens |
| 31. <u>C</u> | 67. <u>B</u> | 103. <u>C</u> | from past exposure, |
| 32. <u>B</u> | 68. <u>B</u> | 104. <u>C</u> | which speeds up |
| 33. <u>A</u> | 69. <u>C</u> | 105. <u>A</u> | antibody production |
| 34. <u>B</u> | 70. <u>B</u> | 106. <u>B</u> | with a second |
| 35. <u>C</u> | 71. <u>D</u> | 107. <u>D</u> | exposure. |
| 36. <u>C</u> | 72. <u>C</u> | 108. <u>D</u> | |
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Answer Key
Body Systems Review

133. Examples: – by
engulfing invaders –
by producing
antibodies – by
marking invaders for
killing
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