Heart and Vascular System Practice Questions

1. The pulmonary veins are unusual as veins because they are transporting _______.
   A. oxygenated blood
   B. de-oxygenated blood
   C. high fat blood
   D. nutrient-rich blood

2. The _______ act to receive blood from veins, while the _______ pump blood away from the heart.
   A. ventricles; capillaries
   B. ventricles; atria
   C. atria; ventricles
   D. atria; capillaries

3. The _______ atroventricular valve is located on the right side of the heart, while the _______ valve is on the left.
   A. bicuspid; tricuspid
   B. bicuspid; mitral
   C. mitral; bicuspid
   D. tricuspid; bicuspid

4. The _______ acts to receive blood from all of the veins of the heart.
   A. coronary sinus
   B. great cardiac vein
   C. anterior interventricular vein
   D. posterior interventricular vein

5. The p wave of an ECG represents
   A. atrial depolarization.
   B. atrial repolarization.
   C. ventricular depolarization.
   D. ventricular repolarization.

6. The QRS complex of an ECG represents
   A. atrial depolarization.
   B. atrial repolarization.
   C. ventricular depolarization.
   D. ventricular repolarization.

7. The _______ is referred to as the pacemaker of the heart.
   A. A-V node
   B. S-A node
   C. Purkinje fibers
   D. A-V bundle

8. The _______ acts to slow action potentials, while the _______ transmits these signals very quickly.
   A. A-V node; A-V bundle
   B. S-A node; A-V bundle
   C. A-V bundle; Purkinje fibers
   D. A-V node; Purkinje fibers
9. An abnormal heartbeat that has a rate exceeding 100 beats per minute is ____________.
   A. bradycardia
   B. tachycardia
   C. atrial fibrillation
   D. ventricular fibrillation

10. The membranous covering of the heart is the _____________. which includes a loosely fitting sac composed of an inner _________ and an outer _________.
    A. epicardium; parietal pericardium; fibrous pericardium
    B. endocardium; parietal pericardium; epicardium
    C. epicardium; fibrous pericardium; parietal pericardium
    D. pericardium; parietal pericardium; fibrous pericardium

11. Blood returning to the heart from the lungs enters the ________, and blood is pumped from the heart to the lungs by the ________.
    A. left atrium; left ventricle
    B. left atrium; right ventricle
    C. right atrium; right ventricle
    D. right atrium; left ventricle

12. The ________ valve prevents the backflow of blood from the left ventricle into the left atrium.
    A. bicuspid atrioventricular
    B. aortic semilunar
    C. tricuspid atrioventricular
    D. pulmonary semilunar

13. During ________, the atrioventricular valves are closed and the semilunar valves are open.
    A. atrial systole
    B. ventricular diastole
    C. ventricular systole
    D. atrial and ventricular diastole

14. The ________ pumps blood into the aorta, and the ________ receives blood from the vena cavae.
    A. right ventricle; right atrium
    B. right ventricle; left atrium
    C. left ventricle; left atrium
    D. left ventricle; right atrium

15. The ________ rhythmically forms impulses initiating each heartbeat and transmits these impulses to the ________.
    A. A-V node; A-V bundle
    B. S-A node; A-V node
    C. A-V node; S-A node
    D. S-A node; A-V bundle

16. Heart rate regulation is primarily controlled by the cardiac control center located in the
    A. hypothalamus.
    B. cerebrum.
    C. medulla oblongata.
    D. pons.

17. The heart rate is increased by impulses from _________ neurons and decreased by impulses from ________ neurons.
    A. sympathetic; parasympathetic
    B. parasympathetic; sympathetic
    C. afferent; efferent
    D. motor; sensory
18. The hepatic portal system is an unusual vein in that it is transporting ____________.
   A. oxygenated blood
   B. de-oxygenated blood
   C. high fat blood
   D. nutrient-rich blood

19. A precapillary sphincter muscle controls the flow of blood from
   A. capillary to venule.
   B. arteriole to capillary.
   C. artery to arteriole.
   D. capillary to arteriole.

20. If excessive fluid retention increases blood volume, blood pressure is likely to
    A. decrease.
    B. be unaffected.
    C. increase.
    D. alter the heart rate.

21. An increase in the frequency of sympathetic impulses to arteries and arterioles, produces ________,
   which ________ blood pressure and velocity.
   A. vasoconstriction; increases
   B. vasoconstriction; decreases
   C. vasodilation; increases
   D. vasodilation; decreases

22. Which of the following states do not normally occur in the heart?
   A. atrial systole and ventricular systole together.
   B. atrial systole and ventricular diastole together.
   C. atrial diastole and ventricular diastole together.
   D. atrial diastole and ventricular diastole together.

23. The tissue layer found in major blood vessels and the heart is the ____________.
    A. smooth muscle layer
    B. endothelial layer
    C. tunica externa
    D. parietal pericardium

24. Blood pressure normally allows plasma substances to leak out of ____________ so as to nourish body
    tissues.
    A. arteries
    B. arterioles
    C. capillaries
    D. venules

25. Thick deposits of lipids on the walls of blood vessels, called ____________, can lead to serious circulatory
    issues.
    A. aneurysm
    B. atherosclerosis
    C. hemorrhoids
    D. congestive heart failure

26. Heart attacks are most likely to be caused by blockage of which vessel?
    A. The aorta
    B. The pulmonary veins
    C. The coronary arteries
    D. The cardiac veins
27. The visceral pericardium also forms the ______ of the heart wall.
   A. epicardium
   B. myocardium
   C. endocardium

28. Which are the strongest pumping chambers?
   A. atria
   B. ventricles

29. Which chamber pumps the blood to the body through the systemic circuit?
   A. right atrium
   B. left atrium
   C. right ventricle
   D. left ventricle

30. Why does the left ventricle have a thicker myocardial wall?
   A. It has to pump blood to the lungs.
   B. It has to pump blood to the body.
   C. It has to pump blood to the left atrium.
   D. It has to pump blood to the liver.

31. The right atrium
   A. receives oxygen rich blood from lungs.
   B. pumps oxygen rich blood toward the body tissues.
   C. receives oxygen poor blood from the body tissues.
   D. pumps oxygen poor blood to the lungs.

32. Which of the following is NOT a vessel that empties into the right atrium?
   A. inferior vena cava
   B. superior vena cava
   C. coronary sinus
   D. pulmonary veins

33. As blood leaves the right atrium, it passes through the ______ valve to the right ventricle.
   A. tricuspid
   B. pulmonary semilunar
   C. mitral
   D. bicuspid

34. What is the function of the heart valves?
   A. to push blood
   B. to prevent the backflow of blood
   C. to stimulate the heart
   D. to give support to the heart

35. What vessels carry oxygen poor blood from the right ventricle to the lungs for gas exchange?
   A. pulmonary arteries
   B. pulmonary veins
   C. aorta and coronary arteries
   D. superior and inferior vena cavas

36. The left atrium
   A. receives oxygen rich blood from lungs.
   B. pumps oxygen rich blood toward the body tissues.
   C. receives oxygen poor blood from the body tissues.
   D. pumps oxygen poor blood to the lungs.
37. What vessels carry oxygen rich blood to the left atrium?
   A. superior and inferior vena cava
   B. pulmonary veins
   C. pulmonary arteries
   D. Both superior and inferior vena cava and pulmonary veins

38. What valve is found between the left atrium and left ventricle?
   A. pulmonary semilunar valve
   B. tricuspid valve
   C. bicuspid valve
   D. aortic semilunar valve

39. The aorta
   A. receives oxygen rich blood from lungs.
   B. carries oxygen rich blood toward the body tissues.
   C. receives oxygen poor blood from the body tissues.
   D. carries oxygen poor blood to the lungs.

40. The pulmonary vein
   A. carries oxygen rich blood from lungs to the left atrium.
   B. carries oxygen rich blood toward the body tissues.
   C. receives oxygen poor blood from the body tissues.
   D. carries oxygen poor blood to the lungs.

41. Which of the following vessels would have a high oxygen content?
   A. aorta
   B. pulmonary veins
   C. pulmonary arteries
   D. Both the aorta and pulmonary veins.

42. Which of the following represents the correct sequence when tracing the path of blood from the superior or inferior vena cava to the lungs?
   A. left atrium, pulmonary semilunar valve, left ventricle, mitral valve, pulmonary arteries
   B. right atrium, tricuspid valve, right ventricle, pulmonary semilunar valve, pulmonary arteries
   C. tricuspid valve, right atrium, aortic semilunar valve, right ventricle, pulmonary veins
   D. pulmonary semilunar valve, right atrium, mitral valve, right ventricle, pulmonary veins

43. The aortic semilunar valve prevents blood from flowing backwards into the
   A. right atrium.
   B. left atrium.
   C. right ventricle.
   D. left ventricle.

44. The pathway from the superior and inferior vena cava, through the right side of the heart to the lungs is called the
   A. pulmonary circuit.
   B. coronary circulation.
   C. systemic circuit.
   D. hepatic-portal system.

45. The pathway from the lungs, through the left side of the heart and out the aorta to the body tissues is called the
   A. pulmonary circuit.
   B. coronary circulation.
   C. systemic circuit.
   D. hepatic-portal system.
46. The heart sounds are due to the
   A. valves closing.
   B. heart contraction.
   C. heart relaxing.
   D. blood flowing.

47. The first heart sound "lub" is made by
   A. closure of the AV valves.
   B. closure of the semilunar valves.
   C. contraction of the ventricles.
   D. contraction of the atria.

48. The sound of a heart murmur is created from
   A. acid reflux in the esophagus.
   B. fluid in the lungs.
   C. leaky heart valves.
   D. a hiccup.

49. The second heart sound "dup" is caused by the
   A. closing of the AV valves.
   B. closing of the mitral valve.
   C. closing of the semilunar valves.
   D. contraction of the ventricles.

50. How is the heart muscle nourished?
   A. by blood in the left ventricle
   B. by the coronary arteries
   C. by the cardiac vein
   D. by the carotid artery

51. What initiates the heartbeat and is called the pacemaker?
   A. nerves
   B. AV node
   C. SA node
   D. brain

52. The correct sequence in the conduction system of the heart is
   A. Purkinje fibers, AV bundle, bundle branches.
   B. AV node, SA node, Purkinje fibers.
   C. SA node, AV node, AV bundle, bundle branches, Purkinje fibers.
   D. AV node, bundle branches, SA node, Purkinje fibers.

53. An area other than the SA node can become the pacemaker. This area is called a(an)
   A. heart block.
   B. intrinsic conduction system.
   C. ec
   D. interventricular septum.

54. In an ECG, the P wave represents
   A. depolarization of the atria.
   B. depolarization of the ventricles.
   C. repolarization of the atria.
   D. repolarization of the ventricles.

55. In an ECG, the QRS complex represents
   A. depolarization of the atria.
   B. depolarization of the ventricles.
   C. repolarization of the atria.
   D. repolarization of the ventricles.
56. In an ECG, the T wave represents
   A. depolarization of the atria.
   B. depolarization of the ventricles.
   C. repolarization of the atria.
   D. repolarization of the ventricles.

57. A heart rate below 60 beats per minute is called
   A. tachycardia.
   B. fibrillation.
   C. bradycardia.
   D. ectopic.

58. A heart rate above 100 beats per minute is called
   A. tachycardia.
   B. fibrillation.
   C. bradycardia.
   D. ectopic.

59. Which chambers contract simultaneously?
   A. two atria
   B. right atrium and right ventricle
   C. all chambers contract simultaneously
   D. all chambers contract separately

60. Systole refers to
   A. relaxation.
   B. contraction.
   C. stimulation.

61. Diastole refers to
   A. relaxation.
   B. contraction.
   C. stimulation.

62. During atrial systole, the AV valves are _____ and the semilunar valves are _____.
   A. closed; open
   B. closed; closed
   C. open; closed
   D. open; open

63. During the ventricular systole, the AV valves _______ and the semilunar valves _____.
   A. close; open
   B. close; close
   C. open; close
   D. open; open

64. When is the first sound of the heartbeat produced?
   A. beginning of atrial systole
   B. beginning of atrial diastole
   C. beginning of ventricular systole
   D. beginning of ventricular diastole

65. When is the second sound of the heartbeat produced?
   A. beginning of atrial systole
   B. beginning of atrial diastole
   C. beginning of ventricular systole
   D. beginning of ventricular diastole
66. The amount of blood pumped out of a ventricle in one minute is the
   A. stroke volume.
   B. heart rate.
   C. cardiac output.
   D. cardiac cycle.

67. The cardiac output is dependent on
   A. heart rate.
   B. respiration rate.
   C. stroke volume
   D. Both heart rate and stroke volume are correct.

68. Cardiac output is equal to
   A. heart rate × stroke volume.
   B. heart rate / stroke volume.
   C. stroke volume + heart rate.
   D. stroke volume - heart rate

69. The cardioregulatory center is located in the
   A. cerebrum.
   B. cerebellum.
   C. medulla oblongata.
   D. pons.

70. Parasympathetic stimulation of the heart causes the heart rate to
   A. increase.
   B. decrease.
   C. stay the same.
   D. increase, then decrease.

71. Sympathetic stimulation of the heart causes the heart rate to
   A. increase.
   B. decrease.
   C. stay the same.
   D. increase, then decrease.

72. What type of receptors, found in the aorta and common carotids arteries, send information to the
   cardioregulatory center to control heart rate?
   A. proprioceptors
   B. nociceptors
   C. baroreceptors
   D. photoreceptors

73. An increase in blood pressure will cause reflex ____________ of the heart rate.
   A. increase
   B. decrease
   C. no change
   D. increase, then decrease

74. Which of the following does NOT affect the stroke volume of the heart?
   A. oxygen concentration of the blood
   B. strength of contraction of the ventricles
   C. blood electrolyte concentration
   D. venous return to the right atrium
75. What is the leading cause of heart attack and stroke in North America?
   A. alcohol
   B. smoking
   C. arteriosclerosis
   D. hypertension

76. ________ carry blood to the heart.
   A. Veins
   B. Arteries
   C. Capillaries

77. ________ handle tissue exchange.
   A. Veins
   B. Arteries
   C. Capillaries

78. ________ carry blood away from the heart.
   A. Arteries
   B. Veins
   C. Capillaries

79. Which type of vessel have very thick, muscular walls?
   A. veins
   B. arteries
   C. arterioles
   D. capillaries

80. Constriction and dilation of smooth muscle in ________ is used to control blood pressure.
   A. capillaries
   B. venules
   C. arteries
   D. arterioles

81. Which type of vessel consists of one layer of endothelial cells?
   A. arteries
   B. veins
   C. capillaries

82. What vein returns blood from the lower part of the body to the heart?
   A. inferior mesenteric vein
   B. hepatic portal vein
   C. brachiocephalic vein
   D. inferior vena cava

83. The hepatic portal vein goes from the
   A. liver to vena cava.
   B. abdominal organs to the liver.
   C. kidney to vena cava.
   D. intestine to kidney.

84. A systolic pressure consistently above 140 or a diastolic pressure above 90 is called
   A. hypertension.
   B. fibrillation.
   C. hypotension.
   D. tachycardia.
85. If blood pressure increases above normal, the response from the medulla oblongata will be to
   A. increase heart rate and dilate the arterioles.
   B. increase heart rate and constrict the arterioles.
   C. decrease heart rate and dilate the arterioles.
   D. decrease heart rate and constrict the arterioles.

86. Vasoconstriction in blood vessels is controlled by the vasomotor center in the
   A. pons.
   B. cerebellum.
   C. hypothalamus.
   D. medulla oblongata.

87. Blood pressure is lowest in the
   A. aorta.
   B. capillaries.
   C. superior and inferior vena cava.
   D. venules.

88. What accounts for blood flow in the arteries?
   A. blood pressure
   B. skeletal muscle contraction
   C. blood pressure and skeletal muscle contraction

89. As the total cross-sectional area of the vessels increases, the velocity of blood flow
   A. increases.
   B. decreases.
   C. does not change.

90. In which type of vessel is blood velocity the greatest?
   A. capillaries
   B. arterioles
   C. veins
   D. arteries

91. Why is it important that blood move very slowly through the capillaries?
   A. to allow for molecular exchange between the blood and the tissues
   B. to allow for normal heart functioning
   C. blood moves very quickly through the capillaries

92. At any given time, more than half the total blood volume is found in
   A. capillaries.
   B. arteries and arterioles.
   C. venules and veins.
   D. arterioles and venules.

93. Constriction of the smooth muscles of an arteriole will ______ blood pressure and ______ blood flow
   into an area.
   A. increase; increase
   B. increase; decrease
   C. decrease; increase
   D. decrease; decrease

94. Small vessels that are involved in the control of blood pressure and distribution of blood are
   A. capillaries.
   B. venules.
   C. arterioles.
95. _____ have valves to prevent backflow.
   A. Veins
   B. Arteries
   C. Capillaries

96. From which section of a capillary does water and small dissolved solutes move into the capillary?
   A. arterial end
   B. midsection
   C. venous end

97. Which pressure is greater on the venous end of a capillary?
   A. blood pressure
   B. osmotic pressure
   C. blood pressure and osmotic pressure are the same

98. Which pressure is greater on the arteriole side of a capillary?
   A. blood pressure
   B. osmotic pressure
   C. blood pressure and osmotic pressure are the same

99. What structures control blood flow into capillary beds?
   A. adhesion junctions
   B. precapillary sphincters
   C. arteriovenous shunt
   D. semilunar valve

100. Osmotic pressure is created from
    A. the pumping of the heart.
    B. movement of substances from an area of higher concentration to an area of lower concentration.
    C. a difference in solute concentration on either side of a semipermeable membrane.
    D. blood volume.
Heart and Vascular System Practice Questions Key

1. The pulmonary veins are unusual as veins because they are transporting _______.
   A. oxygenated blood
   B. de-oxygenated blood
   C. high fat blood
   D. nutrient-rich blood

   Blooms Level: 2. Understand
   Gunstream - Chapter 12 #2
   Learning Outcome: 12.12 compare the systemic and pulmonary circuits.
   Section 12.08
   Topic: Cardiovascular System

2. The _______ act to receive blood from veins, while the _______ pump blood away from the heart.
   A. ventricles; capillaries
   B. ventricles; atria
   C. atria; ventricles
   D. atria; capillaries

   Blooms Level: 1. Remember
   Gunstream - Chapter 12 #4
   Learning Outcome: 12.02 Identify the parts of the heart and describe their functions.
   Section 12.01
   Topic: Cardiovascular System

3. The _______ atroventricular valve is located on the right side of the heart, while the _______ valve is on the left.
   A. bicuspid; tricuspid
   B. bicuspid; mitral
   C. mitral; bicuspid
   D. tricuspid; bicuspid

   Blooms Level: 1. Remember
   Gunstream - Chapter 12 #5
   Learning Outcome: 12.02 Identify the parts of the heart and describe their functions.
   Section 12.01
   Topic: Cardiovascular System

4. The _______ acts to receive blood from all of the veins of the heart.
   A. coronary sinus
   B. great cardiac vein
   C. anterior interventricular vein
   D. posterior interventricular vein

   Blooms Level: 1. Remember
   Gunstream - Chapter 12 #6
   Learning Outcome: 12.02 Identify the parts of the heart and describe their functions.
   Section 12.02
   Topic: Cardiovascular System

5. The p wave of an ECG represents
   A. atrial depolarization.
   B. atrial repolarization.
   C. ventricular depolarization.
   D. ventricular repolarization.

   Blooms Level: 2. Understand
   Gunstream - Chapter 12 #8
   Learning Outcome: 12.05 Identify parts of the heart conduction system and describe their functions.
   Section 12.03
   Topic: Cardiovascular System
6. The QRS complex of an ECG represents
   A. atrial depolarization.
   B. atrial repolarization.
   C. ventricular depolarization.
   D. ventricular repolarization.

   Blooms Level: 2. Understand
   Gunstream - Chapter 12 #9
   Learning Outcome: 12.05 Identify parts of the heart conduction system and describe their functions.
   Section 12.03
   Topic: Cardiovascular System

7. The ________ is referred to as the pacemaker of the heart.
   A. A-V node
   B. S-A node
   C. Purkinje fibers
   D. A-V bundle

   Blooms Level: 1. Remember
   Gunstream - Chapter 12 #11
   Learning Outcome: 12.05 Identify parts of the heart conduction system and describe their functions.
   Section 12.03
   Topic: Cardiovascular System

8. The ________ acts to slow action potentials, while the ________ transmits these signals very quickly.
   A. A-V node; A-V bundle
   B. S-A node; A-V bundle
   C. A-V bundle; Purkinje fibers
   D. A-V node; Purkinje fibers

   Blooms Level: 2. Understand
   Gunstream - Chapter 12 #12
   Learning Outcome: 12.05 Identify parts of the heart conduction system and describe their functions.
   Section 12.03
   Topic: Cardiovascular System

9. An abnormal heartbeat that has a rate exceeding 100 beats per minute is ________.
   A. bradycardia
   B. tachycardia
   C. atrial fibrillation
   D. ventricular fibrillation

   Blooms Level: 1. Remember
   Gunstream - Chapter 12 #13
   Learning Outcome: 12.15 Describe the common disorders of the heart and blood vessels.
   Section 12.03
   Topic: Cardiovascular System

10. The membranous covering of the heart is the ________, which includes a loosely fitting sac composed of an inner ________ and an outer ________.
    A. epicardium; parietal pericardium; fibrous pericardium
    B. endocardium; parietal pericardium; epicardium
    C. epicardium; fibrous pericardium; parietal pericardium
    D. pericardium; parietal pericardium; fibrous pericardium

    Blooms Level: 2. Understand
    Gunstream - Chapter 12 #16
    Learning Outcome: 12.01 Identify the protective coverings of the heart.
    Section 12.01
    Topic: Cardiovascular System

11. Blood returning to the heart from the lungs enters the ________, and blood is pumped from the heart to the lungs by the ________.
    A. left atrium; left ventricle
    B. left atrium; right ventricle
    C. right atrium; right ventricle
    D. right atrium; left ventricle

    Blooms Level: 1. Remember
    Gunstream - Chapter 12 #17
    Learning Outcome: 12.04 Trace the flow of blood through the heart.
    Section 12.01
    Topic: Cardiovascular System
12. The _______ valve prevents the backflow of blood from the left ventricle into the left atrium.
   A. bicuspid atrioventricular
   B. aortic semilunar
   C. tricuspid atrioventricular
   D. pulmonary semilunar

   Blooms Level: 1. Remember
   Gunstream - Chapter 12 #18
   Learning Outcome: 12.02 Identify the parts of the heart and describe their functions.
   Topic: Cardiovascular System

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13. During _______, the atrioventricular valves are closed and the semilunar valves are open.
   A. atrial systole
   B. ventricular diastole
   C. ventricular systole
   D. atrial and ventricular diastole

   Blooms Level: 1. Remember
   Gunstream - Chapter 12 #19
   Learning Outcome: 12.03 Describe the events of the cardiac cycle.
   Topic: Cardiovascular System

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14. The _______ pumps blood into the aorta, and the _______ receives blood from the vena cavae.
   A. right ventricle; right atrium
   B. right ventricle; left atrium
   C. left ventricle; left atrium
   D. left ventricle; right atrium

   Blooms Level: 2. Understand
   Gunstream - Chapter 12 #20
   Learning Outcome: 12.04 Trace the flow of blood through the heart.
   Topic: Cardiovascular System

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15. The _______ rhythmically forms impulses initiating each heartbeat and transmits these impulses to the _______.
   A. A-V node; A-V bundle
   B. S-A node; A-V node
   C. A-V node; S-A node
   D. S-A node; A-V bundle

   Blooms Level: 2. Understand
   Gunstream - Chapter 12 #21
   Learning Outcome: 12.05 Identify parts of the heart conduction system and describe their functions.
   Topic: Cardiovascular System

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16. Heart rate regulation is primarily controlled by the cardiac control center located in the
   A. hypothalamus.
   B. cerebrum.
   C. medulla oblongata.
   D. pons.

   Blooms Level: 1. Remember
   Gunstream - Chapter 12 #22
   Learning Outcome: 12.06 Explain how the heart rate is regulated.
   Topic: Cardiovascular System

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17. The heart rate is increased by impulses from _______ neurons and decreased by impulses from _______ neurons.
   A. sympathetic; parasympathetic
   B. parasympathetic; sympathetic
   C. afferent; efferent
   D. motor; sensory

   Blooms Level: 2. Understand
   Gunstream - Chapter 12 #23
   Learning Outcome: 12.06 Explain how the heart rate is regulated.
   Topic: Cardiovascular System
18. The hepatic portal system is an unusual vein in that it is transporting ____________.
   A. oxygenated blood
   B. de-oxygenated blood
   C. high fat blood
   D. nutrient-rich blood

Learning Outcome: 12.14 Identify the major systemic veins and the organs or body regions that they drain.
Section 12.10
Topic: Cardiovascular System

Blooms Level: 2. Understand
Gunstream - Chapter 12 #3

19. A precapillary sphincter muscle controls the flow of blood from
   A. capillary to venule.
   B. arteriole to capillary.
   C. artery to arteriole.
   D. capillary to arteriole.

Learning Outcome: 12.07 Describe the structure and function of arteries, arterioles, capillaries, venules, and veins.
Section 12.05
Topic: Cardiovascular System

Blooms Level: 2. Understand
Gunstream - Chapter 12 #24

20. If excessive fluid retention increases blood volume, blood pressure is likely to
   A. decrease.
   B. be unaffected.
   C. increase.
   D. alter the heart rate.

Learning Outcome: 12.06 Explain how the heart rate is regulated.
Section 12.07
Topic: Cardiovascular System

Blooms Level: 3. Apply
Gunstream - Chapter 12 #30

21. An increase in the frequency of sympathetic impulses to arteries and arterioles, produces ________.
    which ________ blood pressure and velocity.
   A. vasoconstriction; increases
   B. vasoconstriction; decreases
   C. vasodilation; increases
   D. vasodilation; decreases

Learning Outcome: 12.06 Explain how the heart rate is regulated.
Section 12.07
Topic: Cardiovascular System

Blooms Level: 3. Apply
Gunstream - Chapter 12 #30

22. Which of the following states do not normally occur in the heart?
   A. atrial systole and ventricular systole together.
   B. atrial systole and ventricular diastole together.
   C. atrial diastole and ventricular diastole together.
   D. atrial diastole and ventricular diastole together.

Learning Outcome: 12.03 Describe the events of the cardiac cycle.
Section 12.04
Topic: Cardiovascular System

Blooms Level: 4. Analyze
Gunstream - Chapter 12 #32

23. The tissue layer found in major blood vessels and the heart is the ____________.
   A. smooth muscle layer
   B. endothelial layer
   C. tunica externa
   D. parietal pericardium

Learning Outcome: 12.07 Describe the structure and function of arteries, arterioles, capillaries, venules, and veins.
Section 12.05
Topic: Cardiovascular System

Blooms Level: 1. Remember
Gunstream - Chapter 12 #33
24. Blood pressure normally allows plasma substances to leak out of _________ so as to nourish body tissues.
   A. arteries
   B. arterioles
   C. capillaries
   D. venules
   
   Blooms Level: 1. Remember
   Gunstream - Chapter 12 #34
   Learning Outcome: 12.08 Describe how materials are exchanged between capillary blood and tissue fluid.
   Section 12.05
   Topic: Cardiovascular System

25. Thick deposits of lipids on the walls of blood vessels, called _________, can lead to serious circulatory issues.
   A. aneurysm
   B. atherosclerosis
   C. hemorrhoids
   D. congestive heart failure
   
   Blooms Level: 1. Remember
   Gunstream - Chapter 12 #39
   Learning Outcome: 12.15 Describe the common disorders of the heart and blood vessels.
   Section 12.11
   Topic: Cardiovascular System

26. Heart attacks are most likely to be caused by blockage of which vessel?
   A. The aorta
   B. The pulmonary veins
   C. The coronary arteries
   D. The cardiac veins
   
   Blooms Level: 2. Understand
   Gunstream - Chapter 12 #40
   Learning Outcome: 12.15 Describe the common disorders of the heart and blood vessels.
   Section 12.11
   Topic: Cardiovascular System

27. The visceral pericardium also forms the _________ of the heart wall.
   A. epicardium
   B. myocardium
   C. endocardium
   
   Blooms Level: Remember
   Longenbaker - Chapter 12 #4
   Longenbaker - 012 Chapter. #3
   Section: 12.01
   Topic: Cardiovascular System

28. Which are the strongest pumping chambers?
   A. atria
   B. ventricles
   
   Blooms Level: Remember
   Longenbaker - Chapter 12 #5
   Longenbaker - 012 Chapter. #4
   Section: 12.01
   Topic: Cardiovascular System

29. Which chamber pumps the blood to the body through the systemic circuit?
   A. right atrium
   B. left atrium
   C. right ventricle
   D. left ventricle
   
   Blooms Level: Remember
   Longenbaker - Chapter 12 #6
   Longenbaker - 012 Chapter. #5
   Section: 12.01
   Topic: Cardiovascular System
30. Why does the left ventricle have a thicker myocardial wall?
   A. It has to pump blood to the lungs.
   B. It has to pump blood to the body.
   C. It has to pump blood to the left atrium.
   D. It has to pump blood to the liver.

31. The right atrium
   A. receives oxygen rich blood from lungs.
   B. pumps oxygen rich blood toward the body tissues.
   C. receives oxygen poor blood from the body tissues.
   D. pumps oxygen poor blood to the lungs.

32. Which of the following is NOT a vessel that empties into the right atrium?
   A. inferior vena cava
   B. superior vena cava
   C. coronary sinus
   D. pulmonary veins

33. As blood leaves the right atrium, it passes through the ______ valve to the right ventricle.
   A. tricuspid
   B. pulmonary semilunar
   C. mitral
   D. bicuspid

34. What is the function of the heart valves?
   A. to push blood
   B. to prevent the backflow of blood
   C. to stimulate the heart
   D. to give support to the heart

35. What vessels carry oxygen poor blood from the right ventricle to the lungs for gas exchange?
   A. pulmonary arteries
   B. pulmonary veins
   C. aorta and coronary arteries
   D. superior and inferior vena cavas
36. The left atrium
   A. receives oxygen rich blood from lungs.
   B. pumps oxygen rich blood toward the body tissues.
   C. receives oxygen poor blood from the body tissues.
   D. pumps oxygen poor blood to the lungs.

37. What vessels carry oxygen rich blood to the left atrium?
   A. superior and inferior vena cava
eas
   B. pulmonary veins
   C. pulmonary arteries
   D. Both superior and inferior vena cava and pulmonary veins

38. What valve is found between the left atrium and left ventricle?
   A. pulmonary semilunar valve
   B. tricuspid valve
   C. bicuspid valve
   D. aortic semilunar valve

39. The aorta
   A. receives oxygen rich blood from lungs.
   B. carries oxygen rich blood toward the body tissues.
   C. receives oxygen poor blood from the body tissues.
   D. carries oxygen poor blood to the lungs.

40. The pulmonary vein
   A. carries oxygen rich blood from lungs to the left atrium.
   B. carries oxygen rich blood toward the body tissues.
   C. receives oxygen poor blood from the body tissues.
   D. carries oxygen poor blood to the lungs.

41. Which of the following vessels would have a high oxygen content?
   A. aorta
   B. pulmonary veins
   C. pulmonary arteries
   D. Both the aorta and pulmonary veins.
42. Which of the following represents the correct sequence when tracing the path of blood from the superior or inferior vena cava to the lungs?
   A. left atrium, pulmonary semilunar valve, left ventricle, mitral valve, pulmonary arteries
   B. right atrium, tricuspid valve, right ventricle, pulmonary semilunar valve, pulmonary arteries
   C. tricuspid valve, right atrium, aortic semilunar valve, right ventricle, pulmonary veins
   D. pulmonary semilunar valve, right atrium, mitral valve, right ventricle, pulmonary veins

43. The aortic semilunar valve prevents blood from flowing backwards into the
   A. right atrium.
   B. left atrium.
   C. right ventricle.
   D. left ventricle.

44. The pathway from the superior and inferior vena cava, through the right side of the heart to the lungs
   is called the
   A. pulmonary circuit.
   B. coronary circulation.
   C. systemic circuit.
   D. hepatic-portal system.

45. The pathway from the lungs, through the left side of the heart and out the aorta to the body tissues is
   called the
   A. pulmonary circuit.
   B. coronary circulation.
   C. systemic circuit.
   D. hepatic-portal system.

46. The heart sounds are due to the
   A. valves closing.
   B. heart contraction.
   C. heart relaxing.
   D. blood flowing.

47. The first heart sound "lub" is made by
   A. closure of the AV valves.
   B. closure of the semilunar valves.
   C. contraction of the ventricles.
   D. contraction of the atria.
48. The sound of a heart murmur is created from
A. acid reflux in the esophagus.
B. fluid in the lungs.
C. leaky heart valves.
D. a hiccups.

Bloom's Level: Remember
Longenbaker - Chapter 12 #28
Longenbaker: 012 Chapter. #26
Section: 12.01
Topic: Cardiovascular System

49. The second heart sound "dup" is caused by the
A. closing of the AV valves.
B. closing of the mitral valve.
C. closing of the semilunar valves.
D. contraction of the ventricles.

Bloom's Level: Remember
Longenbaker - Chapter 12 #29
Longenbaker: 012 Chapter. #27
Section: 12.01
Topic: Cardiovascular System

50. How is the heart muscle nourished?
A. by blood in the left ventricle
B. by the coronary arteries
C. by the cardiac vein
D. by the carotid artery

Bloom's Level: Remember
Longenbaker - Chapter 12 #30
Longenbaker: 012 Chapter. #28
Section: 12.01
Topic: Cardiovascular System

51. What initiates the heartbeat and is called the pacemaker?
A. nerves
B. AV node
C. SA node
D. brain

Bloom's Level: Remember
Longenbaker - Chapter 12 #31
Longenbaker: 012 Chapter. #29
Section: 12.01
Topic: Cardiovascular System

52. The correct sequence in the conduction system of the heart is
A. Purkinje fibers, AV bundle, bundle branches.
B. AV node, SA node, Purkinje fibers.
C. SA node, AV node, AV bundle, bundle branches, Purkinje fibers.
D. AV node, bundle branches, SA node, Purkinje fibers.

Bloom's Level: Remember
Longenbaker - Chapter 12 #32
Longenbaker: 012 Chapter. #30
Section: 12.02
Topic: Cardiovascular System

53. An area other than the SA node can become the pacemaker. This area is called a(an)
A. heart block.
B. intrinsic conduction system.
C. ec
D. interventricular septum.

Bloom's Level: Remember
Longenbaker - Chapter 12 #33
Longenbaker: 012 Chapter. #31
Section: 12.02
Topic: Cardiovascular System
54. In an ECG, the P wave represents
A. depolarization of the atria.
B. depolarization of the ventricles.
C. repolarization of the atria.
D. repolarization of the ventricles.

55. In an ECG, the QRS complex represents
A. depolarization of the atria.
B. depolarization of the ventricles.
C. repolarization of the atria.
D. repolarization of the ventricles.

56. In an ECG, the T wave represents
A. depolarization of the atria.
B. depolarization of the ventricles.
C. repolarization of the atria.
D. repolarization of the ventricles.

57. A heart rate below 60 beats per minute is called
A. tachycardia.
B. fibrillation.
C. bradycardia.
D. ectopic.

58. A heart rate above 100 beats per minute is called
A. tachycardia.
B. fibrillation.
C. bradycardia.
D. ectopic.

59. Which chambers contract simultaneously?
A. two atria
B. right atrium and right ventricle
C. all chambers contract simultaneously
D. all chambers contract separately
60. Systole refers to
   A. relaxation.
   B. contraction.
   C. stimulation.

61. Diastole refers to
   A. relaxation.
   B. contraction.
   C. stimulation.

62. During atrial systole, the AV valves are _____ and the semilunar valves are _____.
   A. closed; open
   B. closed; closed
   C. open; closed
   D. open; open

63. During the ventricular systole, the AV valves ______ and the semilunar valves ______.
   A. close; open
   B. close; close
   C. open; close
   D. open; open

64. When is the first sound of the heartbeat produced?
   A. beginning of atrial systole
   B. beginning of atrial diastole
   C. beginning of ventricular systole
   D. beginning of ventricular diastole

65. When is the second sound of the heartbeat produced?
   A. beginning of atrial systole
   B. beginning of atrial diastole
   C. beginning of ventricular systole
   D. beginning of ventricular diastole
66. The amount of blood pumped out of a ventricle in one minute is the
   A. stroke volume.
   B. heart rate.
   C. cardiac output.
   D. cardiac cycle.

67. The cardiac output is dependent on
   A. heart rate.
   B. respiration rate.
   C. stroke volume
   D. Both heart rate and stroke volume are correct.

68. Cardiac output is equal to
   A. heart rate × stroke volume.
   B. heart rate / stroke volume.
   C. stroke volume + heart rate.
   D. stroke volume - heart rate

69. The cardio regulatory center is located in the
   A. cerebrum.
   B. cerebellum.
   C. medulla oblongata.
   D. pons.

70. Parasympathetic stimulation of the heart causes the heart rate to
   A. increase.
   B. decrease.
   C. stay the same.
   D. increase, then decrease.

71. Sympathetic stimulation of the heart causes the heart rate to
   A. increase.
   B. decrease.
   C. stay the same.
   D. increase, then decrease.
72. What type of receptors, found in the aorta and common carotids arteries, send information to the cardioregulatory center to control heart rate?
   A. proprioceptors
   B. nociceptors
   C. baroreceptors
   D. photoreceptors
   
   **Blooms Level:** Remember  
   Longenbaker - Chapter 12 #54  
   Longenbaker - 012 Chapter. #50  
   Section: 12.02  
   **Topic:** Cardiovascular System

73. An increase in blood pressure will cause reflex _______ of the heart rate.
   A. increase
   B. decrease
   C. no change
   D. increase, then decrease
   
   **Blooms Level:** Understand  
   Longenbaker - Chapter 12 #56  
   Longenbaker - 012 Chapter. #52  
   Section: 12.02  
   **Topic:** Cardiovascular System

74. Which of the following does NOT affect the stroke volume of the heart?
   A. oxygen concentration of the blood
   B. strength of contraction of the ventricles
   C. blood electrolyte concentration
   D. venous return to the right atrium
   
   **Blooms Level:** Remember  
   Longenbaker - Chapter 12 #57  
   Longenbaker - 012 Chapter. #52  
   Section: 12.02  
   **Topic:** Cardiovascular System

75. What is the leading cause of heart attack and stroke in North America?
   A. alcohol
   B. smoking
   C. arteriosclerosis
   D. hypertension
   
   **Blooms Level:** Remember  
   Longenbaker - Chapter 12 #60  
   Longenbaker - 012 Chapter. #52  
   Section: 12.02  
   **Topic:** Cardiovascular System

76. _______ carry blood to the heart.
   A. Veins
   B. Arteries
   C. Capillaries
   
   **Blooms Level:** Remember  
   Longenbaker - Chapter 12 #63  
   Longenbaker - 012 Chapter. #54  
   Section: 12.02  
   **Topic:** Cardiovascular System

77. _______ handle tissue exchange.
   A. Veins
   B. Arteries
   C. Capillaries
   
   **Blooms Level:** Remember  
   Longenbaker - Chapter 12 #64  
   Longenbaker - 012 Chapter. #55  
   Section: 12.03  
   **Topic:** Cardiovascular System
78. ______ carry blood away from the heart.
   A. Arteries  
   B. Veins  
   C. Capillaries

79. Which type of vessel have very thick, muscular walls?
   A. veins  
   B. arteries  
   C. arterioles  
   D. capillaries

80. Constriction and dilation of smooth muscle in ______ is used to control blood pressure.
   A. capillaries  
   B. venules  
   C. arteries  
   D. arterioles

81. Which type of vessel consists of one layer of endothelial cells?
   A. arteries  
   B. veins  
   C. capillaries

82. What vein returns blood from the lower part of the body to the heart?
   A. inferior mesenteric vein  
   B. hepatic portal vein  
   C. brachiocephalic vein  
   D. inferior vena cava

83. The hepatic portal vein goes from the
   A. liver to vena cava.
   B. abdominal organs to the liver.
   C. kidney to vena cava.
   D. intestine to kidney.
84. A systolic pressure consistently above 140 or a diastolic pressure above 90 is called
\[ \text{A. hypertension.} \]
\[ \text{B. fibrillation.} \]
\[ \text{C. hypotension.} \]
\[ \text{D. tachycardia.} \]

85. If blood pressure increases above normal, the response from the medulla oblongata will be to
\[ \text{A. increase heart rate and dilate the arterioles.} \]
\[ \text{B. increase heart rate and constrict the arterioles.} \]
\[ \text{C. decrease heart rate and dilate the arterioles.} \]
\[ \text{D. decrease heart rate and constrict the arterioles.} \]

86. Vasoconstriction in blood vessels is controlled by the vasomotor center in the
\[ \text{A. pons.} \]
\[ \text{B. cerebellum.} \]
\[ \text{C. hypothalamus.} \]
\[ \text{D. medulla oblongata.} \]

87. Blood pressure is lowest in the
\[ \text{A. aorta.} \]
\[ \text{B. capillaries.} \]
\[ \text{C. superior and inferior vena cava.} \]
\[ \text{D. venules.} \]

88. What accounts for blood flow in the arteries?
\[ \text{A. blood pressure} \]
\[ \text{B. skeletal muscle contraction} \]
\[ \text{C. blood pressure and skeletal muscle contraction} \]

89. As the total cross-sectional area of the vessels increases, the velocity of blood flow
\[ \text{A. increases.} \]
\[ \text{B. decreases.} \]
\[ \text{C. does not change.} \]
90. In which type of vessel is blood velocity the greatest?
   A. capillaries  
   B. arterioles  
   C. veins  
   **D.** arteries

91. Why is it important that blood move very slowly through the capillaries?  
   **A.** to allow for molecular exchange between the blood and the tissues  
   B. to allow for normal heart functioning  
   C. blood moves very quickly through the capillaries

92. At any given time, more than half the total blood volume is found in  
   A. capillaries.  
   B. arteries and arterioles.  
   **C.** venules and veins.  
   D. arterioles and venules.

93. Constriction of the smooth muscles of an arteriole will _______ blood pressure and ______ blood flow into an area.  
   A. increase; increase  
   **B.** increase; decrease  
   C. decrease; increase  
   D. decrease; decrease

94. Small vessels that are involved in the control of blood pressure and distribution of blood are  
   A. capillaries.  
   B. venules.  
   **C.** arterioles.

95. ______ have valves to prevent backflow.  
   **A.** Veins  
   B. Arteries  
   C. Capillaries
96. From which section of a capillary does water and small dissolved solutes move into the capillary?
   A. arterial end
   B. midsection
   C. venous end

97. Which pressure is greater on the venous end of a capillary?
   A. blood pressure
   B. osmotic pressure
   C. blood pressure and osmotic pressure are the same

98. Which pressure is greater on the arteriole side of a capillary?
   A. blood pressure
   B. osmotic pressure
   C. blood pressure and osmotic pressure are the same

99. What structures control blood flow into capillary beds?
   A. adhesion junctions
   B. precapillary sphincters
   C. arteriovenous shunt
   D. semilunar valve

100. Osmotic pressure is created from
      A. the pumping of the heart.
      B. movement of substances from an area of higher concentration to an area of lower concentration.
      C. a difference in solute concentration on either side of a semipermeable membrane.
      D. blood volume.
## Heart and Vascular System Practice Questions Summary

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