

**Essentials of Anatomy and Physiology, 5e (Martini/Nath)**  
**Chapter 12  The Cardiovascular System: The Heart**

### Multiple-Choice Questions

1) The heart lies in the  
   A) pleural cavity.  
   B) peritoneal cavity.  
   C) abdominopelvic cavity.  
   D) mediastinum.  
   E) none of the above  
   Answer: D  
   Diff: 1  
   Learning Outcome: 12.1  
   Skill Level: 1 Reviewing Facts and Terms

2) The wall between the atria is the  
   A) ventricle.  
   B) coronary sinus.  
   C) coronary sulcus.  
   D) auricle.  
   E) interatrial septum.  
   Answer: E  
   Diff: 1  
   Learning Outcome: 12.1  
   Skill Level: 1 Reviewing Facts and Terms

3) The loose-fitting sac around the heart is lined by the  
   A) parietal pericardium.  
   B) epicardium.  
   C) endocardium.  
   D) parietal myocardium.  
   E) parietal endocardium.  
   Answer: A  
   Diff: 1  
   Learning Outcome: 12.1  
   Skill Level: 1 Reviewing Facts and Terms
4) The innermost layer of the heart wall is the
A) mediastinum.
B) parietal pericardium.
C) epicardium.
D) myocardium.
E) endocardium.
Answer: E
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

5) The functions of the venae cavae include which of the following?
A) returning blood to the atria
B) pumping blood into circulation
C) removing excess fluid from the heart chambers
D) anchoring the heart to surrounding structures
E) preventing expansion of the heart
Answer: A
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

6) The skeleton of the heart consists of
A) a bone within the myocardium.
B) a bone in the interatrial septum.
C) a bone in the interventricular septum.
D) fibrous connective tissue that surrounds the atrioventricular orifices.
E) fibrous connective tissue in the aorta.
Answer: D
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

7) Blood returning from the systemic circulation enters the
A) right atrium.
B) right ventricle.
C) left atrium.
D) left ventricle.
E) pulmonary circulation.
Answer: A
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms
8) The right ventricle pumps blood to the
   A) lungs.
   B) left ventricle.
   C) left atrium.
   D) systemic circuit.
   E) none of the above
   Answer: A
   Diff: 1
   Learning Outcome: 12.1
   Skill Level: 1 Reviewing Facts and Terms

9) Blood is carried away from the heart by
   A) arteries.
   B) veins.
   C) arterioles.
   D) capillaries.
   E) venules.
   Answer: A
   Diff: 1
   Learning Outcome: 12.1
   Skill Level: 1 Reviewing Facts and Terms

10) The left atrium receives blood from the
    A) pulmonary veins.
    B) pulmonary trunk.
    C) aorta.
    D) inferior vena cava.
    E) arteries and veins.
    Answer: A
    Diff: 1
    Learning Outcome: 12.1
    Skill Level: 1 Reviewing Facts and Terms

11) The atrioventricular valve on the left side of the heart is the
    A) mitral valve.
    B) cuspid valve.
    C) tricuspid valve.
    D) pulmonary semilunar valve.
    E) aortic semilunar valve.
    Answer: A
    Diff: 1
    Learning Outcome: 12.1
    Skill Level: 1 Reviewing Facts and Terms
12) Blood vessels in the cardiovascular system are subdivided into the
A) lymphatic and blood circuits.
B) dorsal aorta and venae cavae.
C) systemic and pulmonary circuits.
D) cardiac and vascular circuits.
E) none of the above
Answer: C
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

13) The semilunar valve of the left side of the heart prevents backflow from the
A) aorta.
B) pulmonary trunk.
C) pulmonary veins.
D) right ventricle.
E) left ventricle.
Answer: A
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

14) The tricuspid valve is located
A) in the opening of the aorta.
B) in the opening of the pulmonary trunk.
C) where the vena cavae join the right atrium.
D) between the right atrium and right ventricle.
E) between the left atrium and left ventricle.
Answer: D
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

15) The average pressure in the right ventricle is ________ the pressure in the left ventricle.
A) the same as
B) considerably lower than
C) slightly lower than
D) slightly higher than
E) much higher than
Answer: B
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms
16) The function of an atrium is to  
A) collect blood.  
B) pump blood to the lungs.  
C) pump blood into the systemic circuit.  
D) pump blood to the heart muscle.  
E) all of the above  
Answer: A  
Diff: 1  
Learning Outcome: 12.1  
Skill Level: 1 Reviewing Facts and Terms

17) The following is a list of vessels and structures that are associated with the heart.  
1. right atrium  
2. left atrium  
3. right ventricle  
4. left ventricle  
5. vena cavae  
6. aorta  
7. pulmonary trunk  
8. pulmonary veins  
What is the correct order for the flow of blood entering from the systemic circulation?  
A) 1, 2, 7, 8, 3, 4, 6, 5  
B) 1, 7, 3, 8, 2, 4, 6, 5  
C) 5, 1, 3, 7, 8, 2, 4, 6  
D) 5, 3, 1, 7, 8, 4, 2, 6  
E) 5, 1, 3, 8, 7, 2, 4, 6  
Answer: C  
Diff: 1  
Learning Outcome: 12.1  
Skill Level: 1 Reviewing Facts and Terms

18) The left and right coronary arteries carry blood to the  
A) heart.  
B) head.  
C) brain.  
D) intestines.  
E) liver.  
Answer: A  
Diff: 1  
Learning Outcome: 12.1  
Skill Level: 1 Reviewing Facts and Terms
19) The pulmonary arteries carry blood to the
A) heart.
B) lungs.
C) brain.
D) intestines.
E) liver.
Answer: B
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

20) The heart wall is composed of ________ layers of tissue.
A) two
B) three
C) four
D) five
E) six
Answer: B
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

21) The three layers of the heart wall are the
A) skeletal, smooth, and cardiac.
B) visceral, parietal, and fibrous.
C) arteries, veins, and capillaries.
D) epicardium, myocardium, and endocardium.
E) none of the above
Answer: D
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

22) The cardiac skeleton of the heart functions to
A) physically isolate the muscle fibers of the atria from those of the ventricles.
B) maintain the normal shape of the heart.
C) help distribute the forces of cardiac contraction.
D) A and C only
E) all of the above
Answer: E
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms
23) The first blood vessels to branch from the pulmonary trunk are the
A) pulmonary arteries.
B) bronchial arteries.
C) circumflex arteries.
D) carotid arteries.
E) subclavian arteries.
Answer: A
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

24) Atrioventricular valves prevent backflow into the
A) atria.
B) ventricles.
C) venae cavae.
D) aorta.
E) pulmonary trunk.
Answer: A
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

25) The marginal artery branches off the
A) right coronary artery.
B) left coronary artery.
C) interventricular artery.
D) coronary sinus.
E) aorta.
Answer: A
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

26) The great and middle cardiac veins drain blood into the
A) superior vena cava.
B) inferior vena cava.
C) coronary sinus.
D) coronary sulcus.
E) aorta.
Answer: C
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms
27) The semilunar valves prevent backflow into the
A) atria.
B) aorta.
C) ventricles.
D) pulmonary trunk.
E) venae cavae.
Answer: C
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

28) Blood flowing from the left atrium to the left ventricle flows through the ________ valve.
A) bicuspid
B) left AV
C) mitral
D) all of the above
E) none of the above
Answer: D
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

29) Blood from the systemic circulation returns to the heart by way of the
A) coronary sinus.
B) pulmonary veins.
C) venae cavae.
D) aorta.
E) pulmonary arteries.
Answer: C
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

30) The ________ circuit directly supplies blood to the myocardium.
A) systemic
B) cardiac
C) coronary
D) pulmonary
E) none of the above
Answer: C
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms
31) Folding of the valves in the wrong direction is called
A) myositis.
B) carditis.
C) prolapse.
D) stenosis.
E) infarction.
Answer: C
Diff: 1
Learning Outcome: 12.1
Skill Level: 3 Critical Thinking & Clinical Applications

32) In rheumatic heart disorder, the bicuspid valves close incompletely, leading to
A) mitral valve prolapse.
B) semilunar valve prolapse.
C) ventricular stenosis.
D) atrioventricular valve prolapse.
E) overriding aorta.
Answer: A
Diff: 1
Learning Outcome: 12.1
Skill Level: 3 Critical Thinking & Clinical Applications

33) The maximum rate of contraction in normal cardiac muscle fibers is ________ per minute.
A) 80
B) 140
C) 200
D) 250
E) 300+
Answer: C
Diff: 1
Learning Outcome: 12.2
Skill Level: 1 Reviewing Facts and Terms

34) Which of the following is true regarding cardiac muscle?
A) Neither summation nor tetany can occur.
B) Both summation and tetany can occur.
C) Summation, but NOT tetany, can occur.
D) Tetany, but NOT summation, can occur.
E) none of the above
Answer: A
Diff: 1
Learning Outcome: 12.2
Skill Level: 1 Reviewing Facts andTerms
35) The ________ of the heart is(are) located in the walls of the ventricles.
A) Purkinje fibers.
B) SA node.
C) AV node.
D) bundle branches.
E) bundle of His.
Answer: A
Diff: 1
Learning Outcome: 12.2
Skill Level: 1 Reviewing Facts and Terms

36) The following are various components of the conducting system of the heart:
1. Purkinje cells
2. AV bundle
3. AV node
4. SA node
5. bundle branches

The sequence in which an action potential would move through this system is
A) 1, 4, 3, 2, 5.
B) 3, 2, 4, 5, 1.
C) 3, 5, 4, 2, 1.
D) 4, 3, 2, 5, 1.
E) 4, 2, 3, 5, 1.
Answer: D
Diff: 1
Learning Outcome: 12.2
Skill Level: 1 Reviewing Facts and Terms

37) Depolarization of the atria is represented on an electrocardiogram by the
A) P wave.
B) T wave.
C) S wave.
D) QRS complex.
E) PR complex.
Answer: A
Diff: 1
Learning Outcome: 12.2
Skill Level: 1 Reviewing Facts and Terms
38) Select the correct order of stimulation in the nodal pathways.
A) SA node, AV node, AV bundle, Purkinje fibers
B) SA node, AV bundle, AV node, Purkinje fibers
C) AV node, SA node, AV bundle, Purkinje fibers
D) Purkinje fibers, SA node, AV node, AV bundle
E) none of the above
Answer: A
Diff: 1
Learning Outcome: 12.2
Skill Level: 1 Reviewing Facts and Terms

39) Cardiac muscle is similar to skeletal muscle in the
A) arrangement of the t-tubules.
B) arrangement of the sarcoplasmic reticulum.
C) presence of striations.
D) presence of intercalated discs.
E) all of the above
Answer: C
Diff: 1
Learning Outcome: 12.2
Skill Level: 1 Reviewing Facts and Terms

40) If the connection between the SA node and AV node becomes blocked,
A) the ventricles will beat faster.
B) the ventricles will beat independently of the atria.
C) the ventricular rate of contraction will not be affected.
D) the stroke volume will increase.
E) tachycardia will occur.
Answer: B
Diff: 1
Learning Outcome: 12.2
Skill Level: 1 Reviewing Facts and Terms

41) The QRS wave on an ECG tracing represents
A) atrial depolarization.
B) atrial repolarization.
C) ventricular depolarization.
D) ventricular repolarization.
E) ventricular contraction.
Answer: C
Diff: 1
Learning Outcome: 12.2
Skill Level: 1 Reviewing Facts and Terms
42) The T wave of the ECG corresponds to
A) atrial depolarization.
B) atrial diastole.
C) ventricular systole.
D) ventricular repolarization.
E) none of the above
Answer: D
Diff: 1
Learning Outcome: 12.2
Skill Level: 1 Reviewing Facts and Terms

43) The second heart sound is heard when
A) the AV valves open.
B) the AV valves close.
C) the semilunar valves close.
D) the atria contract.
E) blood enters the aorta.
Answer: C
Diff: 1
Learning Outcome: 12.3
Skill Level: 1 Reviewing Facts and Terms

44) Relaxation of the ventricles is called
A) ventricular diastole.
B) ventricular systole.
C) depolarization.
D) hyperpolarization.
E) none of the above
Answer: A
Diff: 1
Learning Outcome: 12.3
Skill Level: 1 Reviewing Facts and Terms

45) Which of the following is greater?
A) the conduction velocity along a normal myocardial fiber
B) the conduction velocity along a Purkinje fiber
C) the conduction velocity through the heart skeleton
D) the conduction velocity in the heart valves
E) None of the above conducts a signal.
Answer: B
Diff: 1
Learning Outcome: 12.3
Skill Level: 2 Reviewing Concepts
46) Under conditions of hypocalcemia,
A) cardiac muscle cells become lethargic.
B) cardiac muscle contraction is weak.
C) cardiac muscles become extremely excitable.
D) cardiac muscle cells remain the same.
E) none of the above
Answer: B
Diff: 1
Learning Outcome: 12.3
Skill Level: 3 Critical Thinking & Clinical Applications

47) Preload directly determines
A) end diastolic volume.
B) end systolic volume.
C) stroke volume.
D) cardiac output.
E) cardiac reserve.
Answer: A
Diff: 1
Learning Outcome: 12.4
Skill Level: 1 Reviewing Facts and Terms

48) The amount of blood the heart pumps in one minute is
A) end diastolic volume.
B) end systolic volume.
C) stroke volume.
D) cardiac output.
E) cardiac reserve.
Answer: D
Diff: 1
Learning Outcome: 12.4
Skill Level: 1 Reviewing Facts and Terms

49) Heart valves open and close because of
A) pressure differences.
B) heart contractions.
C) signals from the SA node.
D) contractions of the papillary muscles.
E) the moderator band.
Answer: A
Diff: 1
Learning Outcome: 12.4
Skill Level: 1 Reviewing Facts and Terms
50) In which situation would the filling time be the greatest?
A) when heart rate is slow
B) when heart rate is fast
C) when the force of contraction is decreased
D) when the difference between the end diastolic volume and the end systolic volume is small
E) when calcium channel blockers are present
Answer: A
Diff: 1
Learning Outcome: 12.4
Skill Level: 1 Reviewing Facts and Terms

51) The amount of blood the heart beats in one contraction is the
A) HR.
B) SV.
C) CO.
D) EDV.
E) ESV.
Answer: B
Diff: 1
Learning Outcome: 12.4
Skill Level: 1 Reviewing Facts and Terms

52) The ______ accelerates the heart rate when the walls of the right atrium are stretched.
A) venous return
B) stroke volume
C) cardiac output
D) atrial reflex
E) cardiac cycle
Answer: D
Diff: 1
Learning Outcome: 12.4
Skill Level: 1 Reviewing Facts and Terms

53) According to Starling's law of the heart, the cardiac output is directly related to the
A) size of the ventricle.
B) heart rate.
C) venous return.
D) thickness of the myocardium.
E) amount of blood in the cardiovascular system.
Answer: C
Diff: 1
Learning Outcome: 12.4
Skill Level: 2 Reviewing Concepts
54) When a chamber fills with blood and is preparing to begin the next cardiac cycle, that chamber is
A) in systole.
B) in diastole.
C) repolarizing.
D) depolarizing.
E) both B and C
Answer: E  
Diff: 1  
Learning Outcome: 12.4  
Skill Level: 2 Reviewing Concepts

55) During ventricular diastole,
A) the atria are contracting.
B) blood is entering the ventricle.
C) the AV valves are closed.
D) the pressure in the ventricles increases.
E) the ventricles are relaxed.
Answer: E  
Diff: 1  
Learning Outcome: 12.4  
Skill Level: 2 Reviewing Concepts

56) Which of the following is longest in duration of time?
A) the refractory period of cardiac muscle
B) the refractory period of skeletal muscle
C) contraction of skeletal muscle
D) contraction of cardiac muscle
E) the P wave
Answer: A  
Diff: 1  
Learning Outcome: 12.4  
Skill Level: 2 Reviewing Concepts

57) The amount of blood in each ventricle during isovolumetric relaxation is equal to the
A) EDV.
B) ESV.
C) SV.
D) HR.
E) CO.
Answer: B  
Diff: 1  
Learning Outcome: 12.4  
Skill Level: 2 Reviewing Concepts
58) Which of the following is greatest during left ventricular systole?
A) the pressure in the ventricle
B) the pressure in the aorta
C) the pressure in the left atrium
D) the pressure in the right ventricle
E) the pressure in the right atrium
Answer: A
Diff: 1
Learning Outcome: 12.4
Skill Level: 2 Reviewing Concepts

59) The amount of blood in each ventricle during isovolumetric contraction is equal to the
A) HR.
B) ESV.
C) SV.
D) CO.
E) EDV.
Answer: E
Diff: 1
Learning Outcome: 12.4
Skill Level: 2 Reviewing Concepts

60) Cardiac output would be greatest when
A) sympathetic stimulation of the heart increases.
B) parasympathetic stimulation of the heart increases.
C) resting in bed.
D) the vagus nerve is sending many impulses.
E) None of the above increases CO.
Answer: A
Diff: 1
Learning Outcome: 12.4
Skill Level: 2 Reviewing Concepts

61) The amount of blood the heart pumps in one minute is the
A) HR.
B) SV.
C) CO.
D) EDV.
E) ESV.
Answer: C
Diff: 1
Learning Outcome: 12.4
Skill Level: 2 Reviewing Concepts
62) EDV minus ESV equals
   A) SV.
   B) HR.
   C) CO.
   D) CO max.
   E) BMR.
   Answer: A
   Diff: 1
   Learning Outcome: 12.4
   Skill Level: 2 Reviewing Concepts

63) The cardioinhibitory center controls activities of the _________ neurons.
   A) ganglionic
   B) parasympathetic
   C) postganglionic
   D) preganglionic
   E) sympathetic
   Answer: B
   Diff: 1
   Learning Outcome: 12.4
   Skill Level: 2 Reviewing Concepts

Matching Questions

1) Match the structure in the first column with its description in the second column.
   _____ 1. systole                       A. relaxation of heart chambers
   _____ 2. diastole                     B. period of cardiac contraction
   _____ 3. anastomoses                  C. pacemaker of heart
   _____ 4. SA node                      D. amount of blood ejected by the left ventricle each minute
   _____ 5. cardiac output               E. juncture of two peripheral vessels with the capillary bed

   Answer: 1-B, 2-A, 3-E, 4-C, 5-D
   Diff: 1
   Learning Outcome: 12.4
   Skill Level: 1 Reviewing Facts and Terms
Fill in the Blank Questions

1) The superior chambers of the heart are called _________________________ and the inferior chambers are the _________________________.
Answer: atria; ventricles
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

2) The right atrium receives blood from the systemic circuit and passes it to the _________________________.
Answer: right ventricle
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

3) The heart is surrounded by the _________________________ cavity.
Answer: pericardial
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

4) The internal connective tissue network of the heart is called the _________________________.
Answer: cardiac skeleton
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

5) The left border of the heart is formed by the _________________________ and a small portion of the _________________________.
Answer: left ventricle; left atrium
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

6) When arteries connect to one another, it is called an arterial _________________________.
Answer: anastomosis
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

7) The great vessels of the heart are located at the _________________________ of the heart.
Answer: base
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

8) Each cardiac muscle cell is bound to its neighboring cells at sites called _________________________.
Answer: intercalated discs
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

9) The _________________________ circuit carries blood to and from all parts of the body except the lungs.
Answer: systemic
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

10) Cardiac muscle cells are called _________________________.
   Answer: cardiomyocytes
   Diff: 1

11) _________________________ are blood vessels that usually return blood to the heart.
    Answer: Veins
    Diff: 1

12) HR x SV = _________________________.
    Answer: CO (cardiac output)
    Diff: 1

13) The muscle layer of the heart is the _________________________.
    Answer: myocardium
    Diff: 1

14) In a condition called _________________________, the cusps of the bicuspid valve do not close properly.
    Answer: mitral valve prolapse
    Diff: 1

Learning Outcome: 12.1
Skill Level: 3 Critical Thinking & Clinical Applications
15) The property of heart muscle to contract in the absence of neural or hormonal stimulation is called _______________________.
Answer: automaticity or autorhythmicity
Diff: 1
Learning Outcome: 12.2
Skill Level: 1 Reviewing Facts and Terms

16) A slower-than-normal heart rate is called _______________________.
Answer: bradycardia
Diff: 1
Learning Outcome: 12.2
Skill Level: 1 Reviewing Facts and Terms

17) The period between the start of one heartbeat and the beginning of the next is called the _______________________.
Answer: cardiac cycle
Diff: 1
Learning Outcome: 12.3
Skill Level: 1 Reviewing Facts and Terms

18) Abnormal patterns of cardiac activity are known as _______________________.
Answer: arrhythmias
Diff: 1
Learning Outcome: 12.3
Skill Level: 1 Reviewing Facts and Terms

19) Carbon dioxide, pH, and oxygen levels in blood are monitored by receptors called _______________________.
Answer: chemoreceptors
Diff: 1
Learning Outcome: 12.4
Skill Level: 1 Reviewing Facts and Terms

20) The amount of muscle stretch during diastole is called the _______________________.
Answer: preload
Diff: 1
Learning Outcome: 12.4
Skill Level: 1 Reviewing Facts and Terms

21) The push of blood pressure in the great arteries back toward the heart is called _______________________.
Answer: afterload
Diff: 1
Learning Outcome: 12.4
Skill Level: 1 Reviewing Facts and Terms
22) The contraction phase of the cardiac cycle is called _________________________.
Answer:  systole
Diff:  1
Learning Outcome:  12.4
Skill Level:  1 Reviewing Facts and Terms

23) The relaxation phase of the cardiac cycle is called _________________________.
Answer:  diastole
Diff:  1
Learning Outcome:  12.4
Skill Level:  1 Reviewing Facts and Terms

24) In a condition called heart _________________________, the heart is unable to maintain an adequate cardiac output.
Answer:  failure
Diff:  1
Learning Outcome:  12.4
Skill Level:  3 Critical Thinking & Clinical Applications

25) The amount of blood returning to the heart is the _________________________.
Answer:  venous return
Diff:  1
Learning Outcome:  12.4
Skill Level:  3 Critical Thinking & Clinical Applications

26) Atherosclerosis of coronary vessels leads to _________________________.
Answer:  coronary artery disease
Diff:  1
Learning Outcome:  12.4
Skill Level:  3 Critical Thinking & Clinical Applications

27) The term for reduced blood flow to the cardiac muscle is _________________________.
Answer:  coronary ischemia
Diff:  1
Learning Outcome:  12.4
Skill Level:  3 Critical Thinking & Clinical Applications

28) A procedure in which a small section of a peripheral vein is used to create a detour around an obstruction in a coronary artery is called _________________________.
Answer:  coronary bypass surgery
Diff:  1
Learning Outcome:  12.4
Skill Level:  3 Critical Thinking & Clinical Applications
Essay Questions

1) Explain the significance of the thickness of the left ventricular wall.
Answer: The thicker wall of the left ventricle allows it to contract forcefully with great pressure to move the blood systemically. The wall of the right ventricle is thinner so that a lower pressure is created to move the blood a relatively short distance to the lungs.
Diff: 2
Learning Outcome: 12.1
Skill Level: 2 Reviewing Concepts

2) Verne is suffering from cardiac arrhythmias and is brought into the emergency room of a hospital. In the emergency room, he begins to exhibit tachycardia and as a result loses consciousness. His anxious wife asks you why he has lost consciousness. What would you tell her?
Answer: During tachycardia, the heart beats at an abnormally fast rate. The faster the heart beats, the less time there is between contractions for it to fill with blood again. As a result, over a period of time the heart fills with less and less blood and thus pumps less blood out. The stroke volume decreases, as does the cardiac output. When the cardiac output decreases to the point where not enough blood reaches the central nervous system, loss of consciousness occurs.
Diff: 1
Learning Outcome: 12.2
Skill Level: 3 Critical Thinking & Clinical Applications
Using the figure above, identify the labeled part.

1) Label A: __________
Answer: Aortic arch
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

2) Label B: __________
Answer: Pulmonary trunk
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

3) Label C: __________
Answer: Pulmonary semilunar valve
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

4) Label D: __________
Answer: Left pulmonary arteries
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

5) Label E: __________
Answer: Left pulmonary veins
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

6) Label F: __________
Answer: Interatrial septum
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

7) Label G: __________
Answer: Aortic semilunar valve
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

8) Label H: __________
Answer: Cusp of left AV (bicuspid) valve
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

9) Label I: __________
Answer: Left ventricle
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

10) Label J: __________
Answer: Interventricular septum
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms

11) Label K: __________
Answer: Aorta
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms
12) Label L: ________
   Answer: Inferior vena cava
   Diff: 1
   Learning Outcome: 12.1
   Skill Level: 1 Reviewing Facts and Terms

13) Label M: ________
   Answer: Right ventricle
   Diff: 1
   Learning Outcome: 12.1
   Skill Level: 1 Reviewing Facts and Terms

14) Label N: ________
   Answer: Papillary muscles
   Diff: 1
   Learning Outcome: 12.1
   Skill Level: 1 Reviewing Facts and Terms

15) Label O: ________
   Answer: Chordae tendineae
   Diff: 1
   Learning Outcome: 12.1
   Skill Level: 1 Reviewing Facts and Terms

16) Label P: ________
   Answer: Cusp of right AV (tricuspid valve)
   Diff: 1
   Learning Outcome: 12.1
   Skill Level: 1 Reviewing Facts and Terms

17) Label Q: ________
   Answer: Right atrium
   Diff: 1
   Learning Outcome: 12.1
   Skill Level: 1 Reviewing Facts and Terms

18) Label R: ________
   Answer: Opening of coronary sinus
   Diff: 1
   Learning Outcome: 12.1
   Skill Level: 1 Reviewing Facts and Terms

19) Label S: ________
   Answer: Fossa ovalis
   Diff: 1
   Learning Outcome: 12.1
   Skill Level: 1 Reviewing Facts and Terms

20) Label T: ________
   Answer: Right pulmonary arteries
   Diff: 1
   Learning Outcome: 12.1
   Skill Level: 1 Reviewing Facts and Terms

21) Label U: ________
   Answer: Superior vena cava
Diff: 1
Learning Outcome: 12.1
Skill Level: 1 Reviewing Facts and Terms