

MASTERY TEST

Now take the mastery test. Do not guess. As soon as you complete the test, correct it. Note your successes and failures so that you can read the chapter to meet your learning needs.

1. The heart is a cone-shaped, muscular pump located within the _____.
2. The base of the heart is located
 - a. behind the second rib.
 - b. under the sternum.
 - c. between the fourth and fifth rib.
3. The visceral pericardium is also known as the
 - a. epicardium.
 - b. myocardium.
 - c. endocardium.
4. Does statement *a* explain statement *b*?
 - a. Pericarditis is an inflammation of a membrane covering the heart.
 - b. Pericarditis destroys the contractile nature of the myocardium.
5. List the layers of the wall of the heart.
6. Purkinje fibers are located in the
 - a. epicardium.
 - b. myocardium.
 - c. endocardium.
 - d. parietal pericardium.
7. The upper chambers of the heart are the right and left _____; the lower chambers are the right and left _____.
8. The vessels that empty into the upper right chamber of the heart are
 - a. inferior and superior venae cavae.
 - b. pulmonary veins.
 - c. pulmonary arteries.
 - d. coronary sinus.
9. The valve between the chambers of the left side of the heart is the
 - a. semilunar valve.
 - b. bicuspid valve (mitral valve).
 - c. tricuspid valve.
10. Strong fibrous strings attached to the cuops of the tricuspid and bicuspid valves and the papillary musele are the _____.
11. Blood is supplied to the heart by the right and left _____.
12. Atrial contraction, while the ventricles relax, followed by ventricular contraction, while the atria relax, is known as the _____.
13. Heart sounds are a result of
 - a. blood entering the atria in large volumes.
 - b. opening and closing of heart valves.
 - c. contraction of the myocardium.
 - d. changes in the blood flow rate through the chambers of the heart.
14. A mass of merging cells that function as a unit is called
 - a. smooth muscle.
 - b. functional syncytium.
 - c. the sinoatrial node.
 - d. the cardiac conduction system.
15. The cells that initiate the stimulus for contraction of the heart muscle are located in the
 - a. sinoatrial node.
 - b. atrioventricular node.
 - c. Purkinje fibers.
 - d. bundle of His.
16. A recording of the electrical changes that occur in the myocardium during the cardiac cycle is a(n) _____.
17. In the recording described in question 16, atrial contraction is represented by the
 - a. P wave.
 - b. QRS complex.
 - c. T wave.
 - d. U wave.
18. The effect of an increase of parasympathetic nerve impulses on the heart is to (decrease, increase) the heart rate.

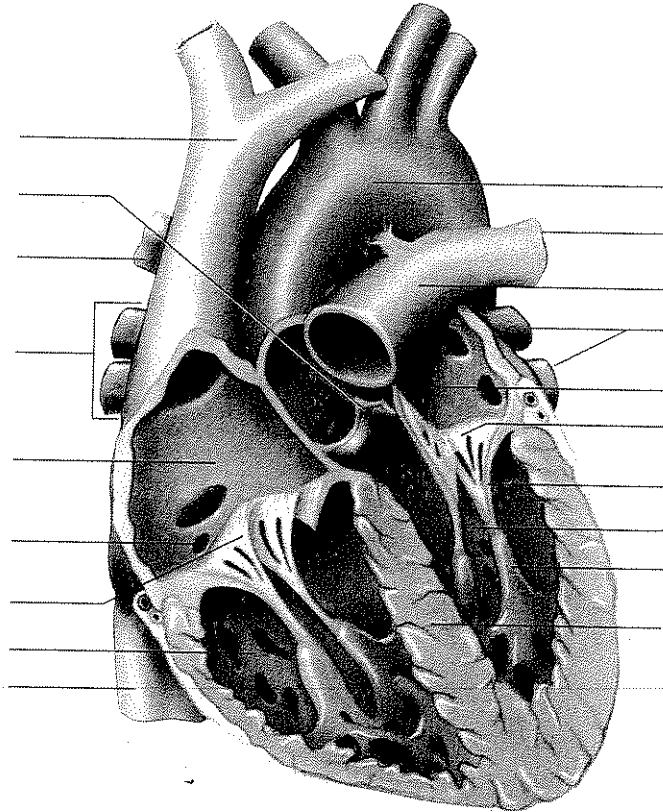
19. Abnormalities in the concentration of which of the following ions is likely to interfere with contraction of the heart?
- chloride
 - potassium
 - calcium
 - sodium
20. When the smooth muscle of the artery contracts, the action is called _____.
21. Fatty materials, particularly cholesterol, form deposits called _____ on the inner walls of arteries when the condition _____ occurs.
22. The vessel that participates directly in the exchange of substances between the cell and the blood is the
- arteriole.
 - artery.
 - capillary.
 - venule.
23. The amount of blood that flows into capillaries is regulated by
- constriction and dilation of capillaries.
 - arterioles.
 - the amount of intercellular tissue.
 - precapillary sphincters.
24. The transport mechanisms used by the capillaries are _____, _____ and _____.
25. Blood pressure is highest in
- an artery.
 - an arteriole.
 - a capillary.
 - a vein.
26. Plasma proteins help retain water in the blood by maintaining
- osmotic pressure.
 - hydrostatic pressure.
 - a vacuum.
27. The middle layer of the walls of veins differs from that of the arteries in that
- it contains more connective tissue.
 - it contains less smooth muscle.
 - this layer is thicker in the vein.
 - it contains some striated muscle.
28. Blood in veins is kept flowing in one direction by the presence of _____.
29. The maximum pressure in the artery, occurring during ventricular contraction, is
- diastolic pressure.
 - systolic pressure.
 - mean arterial pressure.
 - pulse pressure.
30. The amount of blood pushed out of the ventricle with each contraction is called _____.
31. List the four factors that influence blood pressure.
32. Starling's law is related to which of the following cardiac structures?
- interventricular septum
 - conduction system
 - muscle fibers
 - heart valves
33. When the pressoreceptors in the aorta and carotid artery sense an increase in blood pressure, the medulla relays (sympathetic, parasympathetic) impulses.
34. Peripheral resistance is maintained by increasing or decreasing the size of
- capillaries.
 - arterioles.
 - venules.
35. Venous blood flow is maintained by all but which of the following factors?
- blood pressure
 - skeletal muscle contraction
 - vasoconstriction of veins
 - respiratory movements
36. Which of the following vessels carries deoxygenated blood?
- aorta
 - innominate artery
 - basilar artery
 - pulmonary artery
37. The pulmonary veins enter the _____.
38. List the arteries which originate from the arch of the aorta.
39. The abdominal aorta ends with the right and left _____ arteries.

2. Describe the function of each labeled portion of the wall of the heart.

D. Answer these questions concerning heart chambers and valves. (pp. 342–345)

1. List the chambers of the heart.

2. Label these structures in the accompanying illustration: right and left ventricles, right and left atria, superior and inferior venae cavae, aorta, tricuspid valve, pulmonary valve, aortic valve, bicuspid valve, right and left pulmonary veins, right and left pulmonary arteries, chordae tendineae, papillary muscles, interventricular septum, pulmonary trunk, opening of coronary sinus.



3. What vessels take blood to the right atrium?

4. What vessels take blood to the left atrium?

E. Trace the path of the blood through the heart. Include all valves. (pp. 345–346)

F. What is mitral valve prolapse? (p. 344)

- G. The cells of the heart are supplied with blood via the _____ . (p. 346)
- H. What happens when the heart muscle is deprived of oxygen? (p. 346)
- I. Compare myocardial infarction and angina pectoris. (p. 346)

IV. 13.3 Heart Actions (pp. 346–352)

- A. Answer these questions concerning the cardiac cycle. (pp. 346–348)
1. What events make up a cardiac cycle?
 2. What produces the heart sounds heard with a stethoscope?
- B. Describe the characteristics of cardiac muscle fibers. (p. 348)
- C. Answer these questions concerning the cardiac conduction system. (pp. 348–350)
1. Label the parts of the cardiac conduction system in the accompanying illustration: interatrial septum, S-A node, A-V node, A-V bundle, Purkinje fibers, interventricular septum, left bundle branch.

