

NAME _____

DATE _____

SPMD 201 – Human Anatomy for Sports Medicine
Cardiovascular System: The Heart
Chapter 20

Multiple Choice

- _____ 1. The heart:
- A. is a four-chambered muscular pump.
 - B. is posterior to the trachea.
 - C. is lined with an epithelial layer called epicardium.
 - D. lies mostly to the right of the midline of the sternum.
- _____ 2. The innermost layer of the pericardial sac is the:
- A. fibrous pericardium.
 - B. parietal layer of the serous pericardium.
 - C. visceral layer of the serous pericardium.
 - D. myocardium.
- _____ 3. Another name for the visceral pericardium is the:
- A. endocardium.
 - B. epicardium.
 - C. isocardium.
 - D. myocardium.
- _____ 4. Blood in the pulmonary veins returns to the:
- A. right atrium.
 - B. left atrium.
 - C. right ventricle.
 - D. left ventricle.
- _____ 5. The great cardiac vein and middle cardiac vein empty into a venous cavity called the:
- A. pulmonary vein.
 - B. inferior vena cava.
 - C. superior vena cava.
 - D. coronary sinus.

- _____6. Occlusion (blockage) of the following would primarily damage the left ventricle;
- A. circumflex artery
 - B. pulmonary artery
 - C. right marginal artery
 - D. coronary sinus artery
- _____7. The AV valve that is located on the same side of the heart as the origin of the aorta is the:
- A. mitral valve.
 - B. tricuspid valve.
 - C. aortic semilunar valve.
 - D. pulmonary semilunar valve.
- _____8. The chordae tendineae:
- A. connect the atria to the ventricles.
 - B. are found in the ventricular septum.
 - C. are part of the conducting system of the heart.
 - D. connect the flaps of the AV valves to the papillary muscles.
- _____9. The skeleton of the heart:
- A. helps to support the coronary arteries.
 - B. anchor the cardiac muscle fibers.
 - C. contain osseous tissue.
 - D. prevents the backflow of blood in the heart.
- _____10. An incompetent mitral valve may cause blood to back up into the:
- A. aorta.
 - B. left atrium.
 - C. left ventricle.
 - D. coronary circulation.
- _____11. Increased vagal stimulation would cause:
- A. the heart rate to decrease.
 - B. the heart rate to increase.
 - C. no change in heart rate.

- _____12. Baroreceptor reflexes:
- A. are triggered by increased blood osmolality.
 - B. correct changes in blood pH.
 - C. can change the heart rate.
 - D. are of minor importance in humans.
- _____13. The cardioregulatory center of the brain is located in the:
- A. hypothalamus.
 - B. medulla oblongata.
 - C. cerebellum.
 - D. cerebrum.
- _____14. Stimulation of the heart via the sympathetic nerves would:
- A. slow heart rate.
 - B. decrease stroke volume.
 - C. increase the force of ventricular contraction.
 - D. increase end-systolic volume.
- _____15. Blood vessels enter and exit from the _____ of the heart.
- A. apex
 - B. base
 - C. auricles
 - D. trigone
- _____16. The “double pump” function of the heart includes the right side, which serves as the _____ circuit pump, while the left side serves as the _____ pump.
- A. systemic; pulmonary
 - B. pulmonary; hepatic portal
 - C. hepatic portal; cardiac
 - D. pulmonary; systemic
- _____17. Atrioventricular valves prevent backflow of blood into the _____; semilunar valves prevent backflow into the _____.
- A. atria; ventricle
 - B. lungs; systemic circulation
 - C. ventricles; atria
 - D. capillaries; lungs

- _____18. Blood flows from the left atrium into the left ventricle through the _____ valve.
- A. bicuspid
 - B. L. atrioventricular
 - C. mitral
 - D. A, B, and C are correct
- _____19. Assuming anatomic position, the *best* way to describe the *specific* location of the heart within the body is:
- A. within the mediastinum of the thorax.
 - B. in the region of the fifth intercostal space.
 - C. just behind the lungs.
 - D. in the center of the chest.
- _____20. The anterior border of the ventricles is marked by the:
- A. coronary sulcus
 - B. anterior interventricular sulcus
 - C. interventricular septum
 - D. mediastinum

Alternate Choice

1. The *interatrial* septum is thicker / thinner (circle one) than the *interventricular* septum.
2. The structure, remnant of the fetal heart, which once permitted flow from the right atrium to the left atrium and is closed permanently after birth is called the coronary sulcus / fossa ovalis (circle one).
3. Parasympathetic stimulation (vagus nerve) increases / decreases (circle one) heart rate.
4. The heart is situated obliquely in the middle mediastinum, with approximately two-thirds lying to the left / right (circle one) of the median plane.
5. The posterior interventricular branch arises from the left / right (circle one) coronary artery.
6. The right atrium receives deoxygenated / oxygenated (circle one) blood.
7. The pulmonary arteries carry deoxygenated / oxygenated (circle one) blood.
8. The pulmonary semilunar valve is located anterior / posterior (circle one) to the aortic semilunar valve.

9. The left / right (circle one) AV valve is also referred to as the mitral valve.
10. The coronary sulcus marks the border between the atria and ventricles / ventricles (circle one).

Fill-In

1. The right atrioventricular (AV) valve is referred to as the _____ valve.
2. The muscular wall of the heart which contains cardiac muscle, blood vessels and nerves is called the _____.
3. The left atrium receives blood from the _____ (number) pulmonary veins.
4. During embryonic development, the two atria are connected by the fossa _____.
5. Blood leaves the heart for the systemic circulation from the left _____.
6. The sac-like dilations of the base of the aorta that prevent the valves from sticking to the wall of the aorta are called _____.
7. The cardioinhibitory center decreases heart rate via the _____ nerve.
8. The visceral pericardium is also referred to as _____.

Short Answer

1. What three (3) distinct layers comprise the tissues of the heart wall?
2. What is the difference between visceral pericardium and parietal pericardium?
3. Give the approximate size and shape of the heart. Where is it located?
4. What are the functions of the papillary muscles and the chordae tendineae?
5. What are the functions of the fibrous skeleton of the heart?
6. NAME the major blood vessels that enter and leave the heart. Which chambers of the heart do they enter or exit?
7. DRAW a transverse section of the aortic and pulmonary semilunar valves, labeling the valves and their respective three cusps (anterior, posterior, right, left).

8. DRAW and LABEL a schematic of the heart and the flow of blood through the pulmonary and systemic circuits, indicating the chambers of the heart and the direction of blood flow through the respective circuits.
9. What is the function of the pericardial fluid?
10. DESCRIBE the orientation of the cardiac muscle fibers and EXPLAIN the significance of their orientation.

Multiple Choice

- | | | | |
|------|-------|-------|-------|
| 1. A | 6. A | 11. A | 16. D |
| 2. C | 7. A | 12. C | 17. A |
| 3. B | 8. D | 13. B | 18. D |
| 4. B | 9. B | 14. C | 19. A |
| 5. D | 10. B | 15. B | 20. B |

Alternate Choice

- | | |
|-----------------|--------------------------|
| 1. thinner | 6. deoxygenated |
| 2. fossa ovalis | 7. deoxygenated |
| 3. decreases | 8. anterior |
| 4. left | 9. left |
| 5. right | 10. atria and ventricles |

Fill-In

- | | |
|-------------------------------|---------------|
| 1. tricuspid | 6. sinuses |
| 2. myocardium | 7. vagus |
| 3. four | 8. epicardium |
| 4. ovale (not <i>ovalis</i>) | |
| 5. ventricle | |