

RAVEN CHAPTER 50 GUIDED NOTES: THE CIRCULATORY SYSTEM

Raven 9th edition

1. Why aren't diffusion and active transport sufficient for transport in multicellular animals?

2. Briefly describe circulation in the cnidarians and flatworms

3. Compare the circulatory systems of higher animals.

a. Open

Who has one?

b. Closed

Who has one?

4. List and describe the three principal functions of the vertebrate circulatory system.

a.

b.

c.

5. Briefly describe the components of the blood.

a. Plasma _____

b. Erythrocytes _____

c. Leukocytes _____

d. Platelets _____

6. Compare the structure of each vessel. Pay particular attention to structure-function correlations:

a. Artery

b. Capillary

c. Vein

7. How do precapillary sphincters help regulate capillary blood flow, blood pressure, and body temperature?

8. What happens to blood pressure and velocity as the blood flows through:

a. Artery _____

b. Capillary _____

c. Vein _____

9. If blood pressure in veins is so low, how does blood return to the heart from the legs?

10. Discuss the role of the lymphatic system in returning interstitial blood to the circulatory system. Discuss the role of osmosis in the movement of fluid between capillaries and interstitial fluid

11. What is the adaptive value of the four chambered heart?

12. Answer the following regarding the structure of the human heart.

a. Which side is oxygen rich _____ ...
oxygen poor _____

b. Which chambers create the blood pressure in the arteries?

13. What causes the heart sounds?

14. How is heart rate regulated?

15. Discuss the homeostatic regulation of blood pressure and the role of:

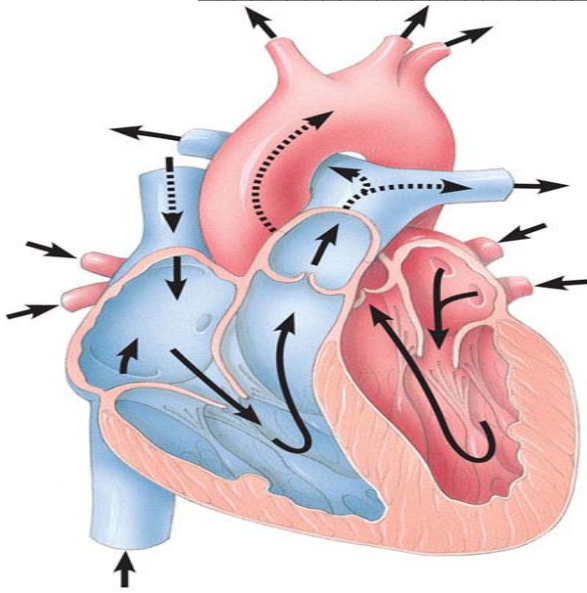
a. baroreceptor reflex

b. ADH

c. aldosterone

d. atrial natriuretic hormone

e. nitric oxide



15. Label the diagram of the heart.

16. Describe the types of **cardiovascular diseases** that are leading causes of death in US:

a. Stroke

b. Heart attack

c. Atherosclerosis

d. Arteriosclerosis

17. Discuss the role of zymogens in blood clotting.

18. Hypothesize why clotting is referred to as a “cascade reaction”.
