

Name _____

Period _____

Ms. Foglia

Date _____

AP: CHAPTER 42: CIRCULATION & GAS EXCHANGE

CIRCULATION

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

2. Circulation in the Cnidarians consists of...

3. Compare the circulatory systems of higher animals.

a. Open _____

b. Closed _____

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

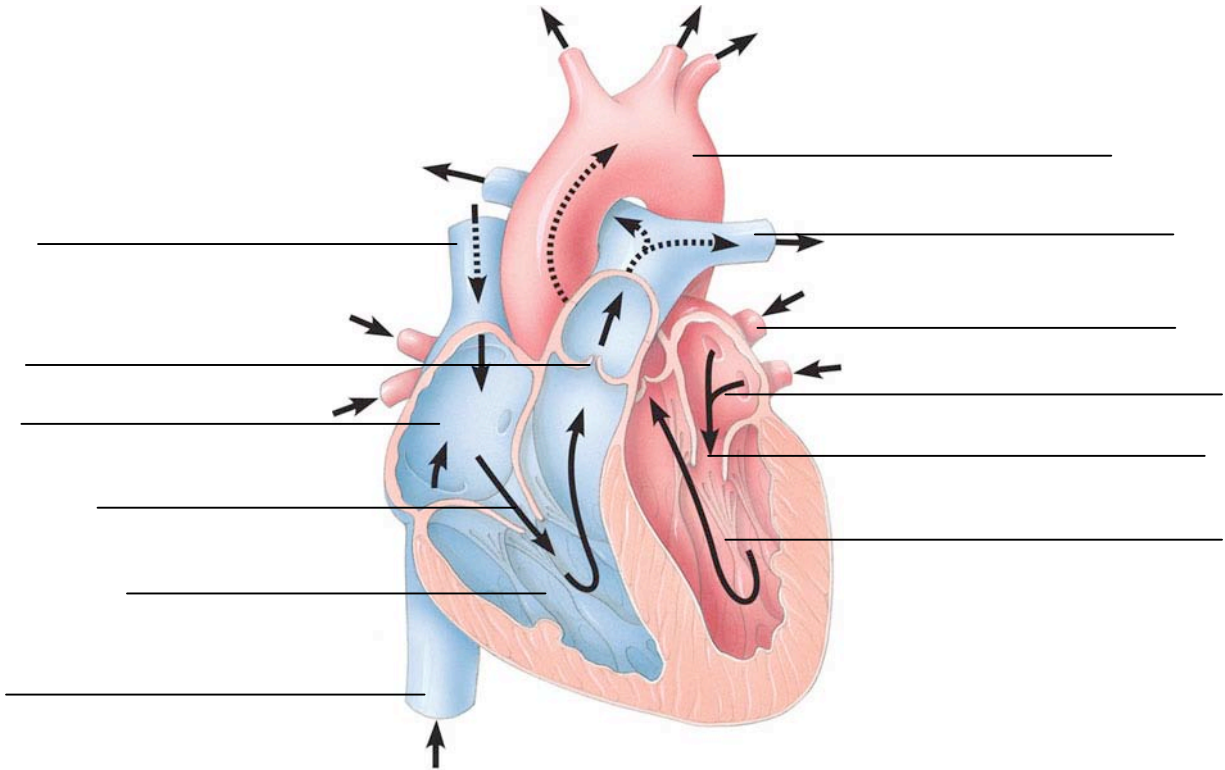
5. Answer the following regarding the structure of the human heart.

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

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

c. What causes the heart sounds? _____

6. Label the diagram of the heart.



7. How is the heart rate regulated? _____

8. Compare the structure of each vessel:

a. Artery _____

b. Capillary _____

c. Vein _____

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

a. Arteries _____

b. Capillaries _____

c. Veins _____

10. How do precapillary sphincters help regulate blood pressure and body temperature?

11. How does osmosis determine the movement of fluid between capillaries and interstitial fluid?

12. Briefly describe the components of the blood.

a. Plasma _____

b. Erythrocytes _____

c. Leukocytes _____

d. Platelets _____

13. Describe the types of **Cardiovascular diseases** that are leading causes of death in US:

a. Stroke _____

b. Heart attack _____

c. Atherosclerosis _____

d. Arteriosclerosis _____

e. Hypertension _____

14. Why can clotting be viewed as a cascade reaction?

GAS EXCHANGE

15. Describe the relationship of the respiratory surface and the transport system.

16. What are three characteristics typical of a respiratory surface?

- a. _____
- b. _____
- c. _____

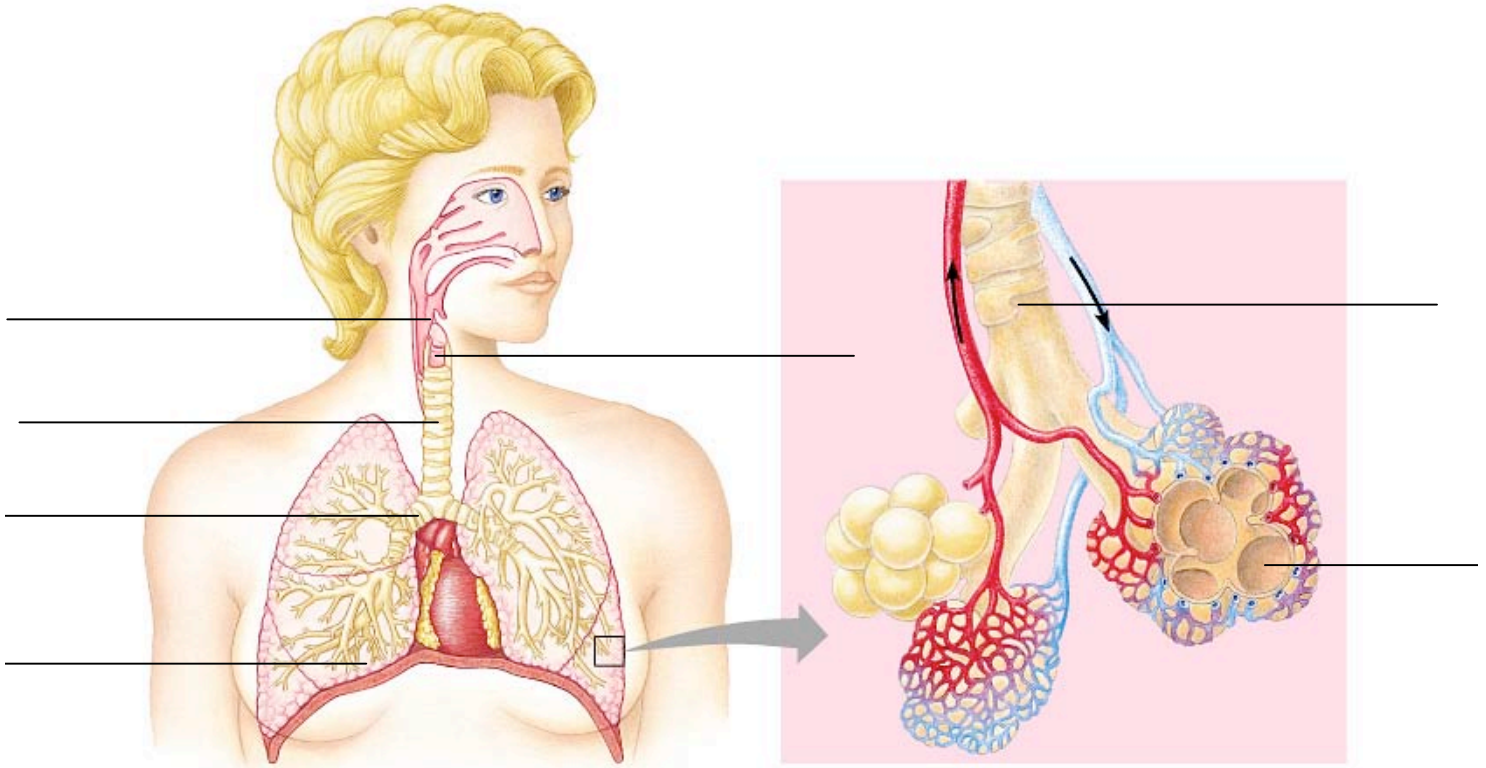
17. Why do terrestrial animals have internal respiratory surfaces?

18. What is countercurrent about a fishes gill?

19. How is countercurrent of adaptive value?

20. List some features that show how tracheal tubes and lungs are adaptive for gas exchange?

21. Label the diagram of the human respiratory system.



22. What is the role of the alveoli?

23. How do partial pressures of gasses influence the exchange of gas?

24. Describe how breathing is regulated. Include the role of each of the following.

- a. Medulla _____
- b. pH _____
- c. Carotid arteries _____
- d. Aorta _____
- e. Diaphragm _____

25. What is the adaptive value of hemoglobin?

26. Review the dissociation curves for hemoglobin.

- a. Why does oxygen leave the hemoglobin when it passes through the resting tissues?

- b. How does pH reduction influence oxygen release from the blood?

27. Outline the reactions showing the path of carbon dioxide produced in body cells, transported as bicarbonate ion in the plasma, to the carbon dioxide released into the alveoli.

