

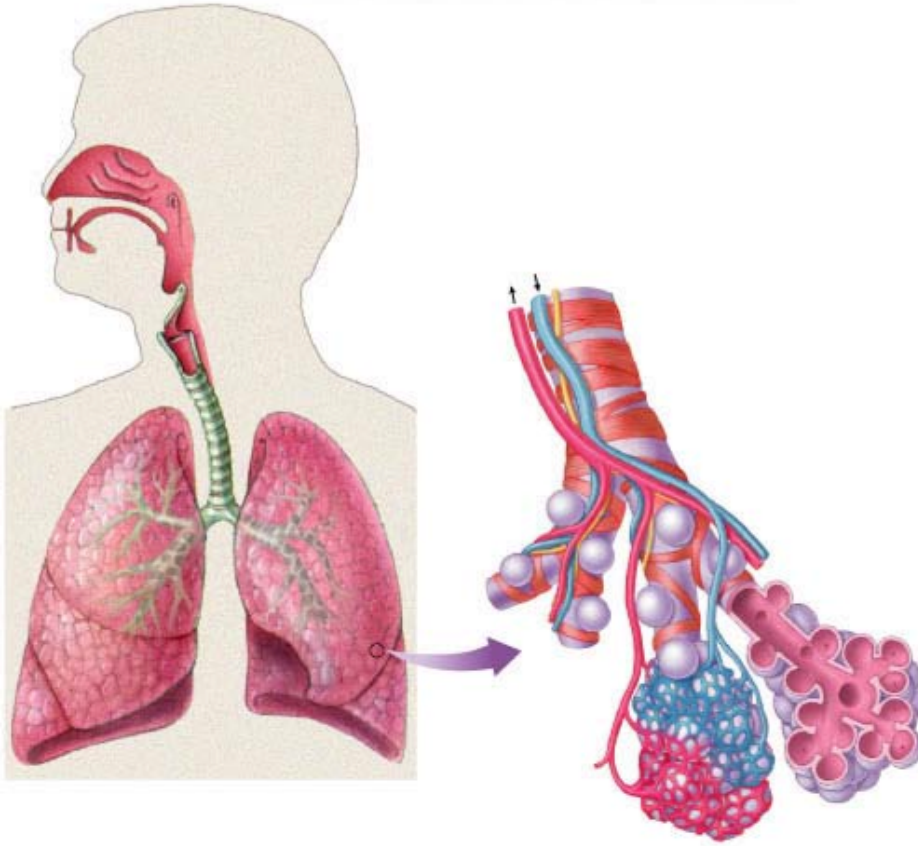
RAVEN CHAPTER 49 GUIDED NOTES: RESPIRATION

Raven 9th edition

Gas Exchange

19. Describe the relationship of the respiratory surface to the transport (circulatory) system.
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20. Through what process do gases move across the cell membrane?
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21. What are two characteristics typical of a respiratory surface?
- a. _____
- b. _____
22. Why must all animals constantly move either water (for aquatic animals) or air (for terrestrial animals) across their respiratory surface
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23. How do partial pressures of gases influence the exchange of gas?
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24. Why do terrestrial animals have internal respiratory surfaces?
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25. What is countercurrent about the function of a fish's gills?
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-
26. What adaptive value is the countercurrent exchange system of gills?
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-
27. List some features that show how tracheal tubes and lungs are adapted for gas exchange?
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28. Label the diagram of the human respiratory system.



29. What is the role of the alveoli?

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

a. medulla _____

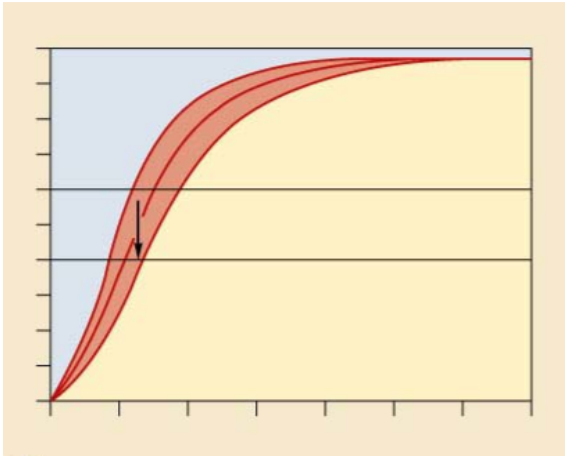
b. pH _____

c. carotid & aortic arteries _____

31. Explain the mechanics of human breathing. How does the diaphragm enable breathing?

32. What is the adaptive value of hemoglobin?

33. Review the dissociation curves for hemoglobin. Explain what they illustrate.



34. How does lowering pH influence oxygen release from the blood?

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

36. How is CO₂ carried in the blood?

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