

Water, Electrolyte, and Acid-Base Balance
Chapter Study Guide (C24)
Hot List Questions (W2020)
“>” = Hot List Questions

1. > What must be regulate to maintain homeostasis? (3 things)
2. What are the two water compartments in the human body? How may the noncellular volume be further subdivided?
3. What two forces may move water across a plasma membrane?
4. What follows an ion when it moves across the plasma membrane?
5. What is water balance? What is the benchmark volume for water balance?
6. What term describes our physiologic state when we need to drink water?
7. What are the sources of water gain and water loss?
8. > Where is the thirst center located? How do we sense dehydration? Two pathways?
9. What are the functions of antidiuretic hormone and aldosterone? Mode of action?
10. How may drinking large volumes of hypotonic water kill you? What tissues are at greatest risk? Why?
11. > What is the most important intracellular cation? Extracellular cations?
12. What is the difference between a salt and an acid?
13. > What is the benchmark for our pH? Safe range?
14. What is the difference between a strong acid and a weak acid (give examples)?
15. What is the difference between a strong base and a weak base (give examples)?
16. > What is acidosis?
17. > What is alkalosis?
18. > What is a buffer?
19. > What is the difference between a physiological buffers and a chemical buffers?
20. > What are the three chemical buffers?
21. > What are the two physiologic buffers?
22. What is the difference between respiratory acidosis and respiratory alkalosis?
23. What is the difference between metabolic acidosis and metabolic alkalosis?
24. What pH number represents the strongest acid? Example?
25. What pH number represents the strongest base? Example?
26. What is the pH of water?
27. > Why is it critical that we regulate pH? (Think about proteins! Think about displacement of ions across the plasma membrane!)
28. > What will happen to pH if you hyperventilate?
29. > What will happen to pH if you hypoventilate?
30. What will happen to the respiratory rate when you hyperventilate or hypoventilate?
31. How is sodium regulated?
32. How is potassim regulated?
33. How is calcium regulated?