

24. H_2CO_3 dissociates in aqueous solution to H^+ and HCO_3^- with a K_{a1} value = 4.3×10^{-7} . The second dissociation forms H^+ CO_3^{2-} and the K_{a2} is 4.8×10^{-11} .

This acid

- a. is strong
- b. produces large numbers of protons because of the high K_{a1} .
- c. is weak.
- d. does not produce any buffer into solution.

25. What three acids contribute to acid rain?

HNO_3 , H_2CO_3 , H_2SO_4

26. What two acids contributing to acid precipitation are almost entirely from anthropogenic sources.

27. Chlorine gas is often used as a disinfectant in water and wastewater treatment. This hydrolysis reaction is considered to be a disproportionation reaction. Write the reaction:

28. What is the difference in meaning between *adsorbed* and *absorbed* when referring to contaminants involved with particles?

29. Why is a high level of alkalinity (presence of HCO_3^- and CO_3^{2-}) important in natural waters?

30. Why is it important to maintain a high *Eh* in drinking water?