

Chapter 6 Review

Name _____

1. _____ 3. _____ 5. _____ 7. _____ 9. _____
2. _____ 4. _____ 6. _____ 8. _____ 10. _____

11. **Classify** each of the following mixtures as homogeneous or heterogeneous:

_____ a. lemonade with pulp

_____ c. vinegar

_____ b. coffee with cream and sugar

_____ d. dessert gelatin with pears in it

12. **Compare** suspensions, colloids, and solutions in terms of particle size and methods to separate each type of mixture.

13. **Explain** how you can speed up the dissolving process when preparing juice from frozen concentrate.

14. **Summarize** how to produce three solutions of sugar in water: an unsaturated solution, a saturated solution, and a supersaturated solution.

15. **Describe** what happens to a saturated solution of sugar in water when the temperature of the solution is suddenly lowered by 10°C.

16. **Classify** each of the following substances as acidic, basic, or neutral:

_____ a. a dilute solution of vinegar in water, which has more H_3O^+ ions than OH^- ions

_____ b. soapy water with a lower H_3O^+ ion concentration than OH^- ion concentration

_____ c. a solution with an equal concentration of hydronium ions and hydroxide ions

_____ d. a bitter liquid

_____ e. pure water

_____ f. a tart solution of mixed citrus juices

17. **Write** the balanced chemical equation that describes the ionization of nitric acid, HNO_3 , in water.

18. **Write** the balanced chemical equation that describes the dissociation of the strong base magnesium hydroxide, $\text{Mg}(\text{OH})_2$, in water.

20. Compare the acidity of three solutions having pH values of 2, 3, and 6.

21. **Creative Thinking** A red juice extracted by boiling red cabbage can serve as a pH indicator. Red cabbage indicator is red at low pH (pH = 1 to 4), a light purple at neutral (pH = 7) green at moderately basic pH (pH = 8 to 11), and yellow at very basic pH (pH = 13)

a. Construct a pH scale below that indicates colors using this information.

b. Indicate on the pH scale above the approximate locations of the common liquids listed below:

Liquid	pH
Water	7.0
Cow's milk	6.5
Vinegar	2.8
Egg	7.8

Liquid	pH
Milk of magnesia	10.5
Orange juice	3.5
Black tea	5.5
Sea water	8.5

c. Compare the acidity of orange juice with that of cow's milk and black tea.

22. **Applying Knowledge** When water and lithium chloride, LiCl, are mixed, LiCl dissolves. When toluene and LiCl are mixed, LiCl does not dissolve. When toluene and water are mixed, they form two immiscible layers. Deduce the nature of toluene (that is, polar, nonpolar, or ionic) from the three observations. Explain.

23. Explain How is a strong acid different from a weak acid?

24. Explain How are soaps and detergents alike and how they are different?

25. **Concept Mapping** Complete the concept map below by writing the correct word or phrase in the lettered boxes.

