

Chapter 8

8.1 (a) true (b) true (c) true (d) false **8.3** (a) solute: sodium chloride; solvent: water (b) solute: sucrose; solvent: water (c) solute: water; solvent: ethyl alcohol (d) solute: ethyl alcohol; solvent: methyl alcohol **8.5** (a) first solution (b) first solution (c) first solution (d) second solution **8.7** (a) supersaturated (b) saturated (c) saturated (d) unsaturated **8.9** (a) saturated (b) unsaturated (c) unsaturated (d) saturated **8.11** (a) dilute (b) concentrated (c) dilute (d) concentrated **8.13** (a) hydrated ion (b) hydrated ion (c) oxygen atom (d) hydrogen atom **8.15** (a) decrease (b) increase (c) increase (d) increase **8.17** (a) slightly soluble (b) very soluble (c) slightly soluble (d) slightly soluble **8.19** (a) ethanol (b) carbon tetrachloride (c) ethanol (d) ethanol **8.21** (a) soluble with exceptions (b) soluble (c) insoluble with exceptions (d) soluble **8.23** (a) all are soluble (b) all are soluble (c) CaBr_2 , $\text{Ca}(\text{OH})_2$, CaCl_2 (d) NiSO_4 **8.25** (a) diagram IV (b) diagrams I and III **8.27** (a) 7.10%(m/m) (b) 6.19%(m/m) (c) 9.06%(m/m) (d) 0.27%(m/m) **8.29** (a) 3.62 g (b) 14.5 g (c) 68.8 g (d) 124 g **8.31** 0.6400 g **8.33** 276 g **8.35** (a) 4.21%(v/v) (b) 4.60%(v/v) **8.37** 18%(v/v) **8.39** (a) 2.0%(m/v) (b) 15%(m/v) **8.41** 0.500 g **8.43** 3.75 g **8.45** (a) 6.0 M (b) 0.456 M (c) 0.342 M (d) 0.500 M **8.47** (a) 273 g (b) 0.373 g (c) 136 g (d) 88 g **8.49** (a) 85.6 mL (b) 2.64 mL (c) 9180 mL (d) 0.24 mL **8.51** (a) 0.183 M (b) 0.0733 M (c) 0.0120 M (d) 0.00275 M **8.53** (a) 1450 mL (b) 18.0 mL (c) 85,600 mL (d) 7.5 mL **8.55** (a) 3.0 M (b) 3.0 M (c) 4.5 M (d) 1.5 M **8.57** diagram II **8.59** (a) suspension (b) suspension (c) true solution and colloidal dispersion (d) true solution **8.61** (a) false (b) false (c) false (d) true **8.63** The presence of solute molecules decreases the ability of solvent molecules to escape. **8.65** It is a more concentrated solution and thus has a lower vapor pressure. **8.67** diagram III **8.69** (a) same as (b) greater than (c) less than (d) greater than **8.71** 2 to 1 **8.73** (a) swell (b) remain the same (c) swell (d) shrink **8.75** (a) hemolyze (b) remain unaffected (c) hemolyze (d) crenate **8.77** (a) hypotonic (b) isotonic (c) hypotonic (d) hypertonic **8.79** (a) decrease (b) increase (c) not change (d) decrease **8.81** (a) K^+ and Cl^- leave the bag. (b) K^+ , Cl^- , and glucose leave the bag. **8.83** (a) like (both soluble) (b) unlike (c) unlike (d) like (both insoluble) **8.84** (a) 4.02 g (b) 7.303 g (c) 12.6 g (d) 0.148 g **8.85** 0.0700 qt **8.86** (a) 7.1 L (b) 9.5 L (c) 11 L (d) 14 L **8.87** (a) 0.472 M (b) 0.708 M (c) 1.04 M (d) 1.60 M **8.88** (a) 37.5%(m/v) (b) 2.23 M **8.89** (a) 4.00 M (b) 3.22 M **8.90** (a) NaCl (b) MgCl_2 **8.91** c **8.92** b **8.93** d **8.94** b **8.95** b **8.96** d **8.97** b **8.98** d **8.99** c **8.100** b