

Name: _____

1. What is the solvent and solute in NaCl (aq) ?

2. At 20 °C and a partial pressure of 760 mm Hg, the solubility of CO₂ in water is 0.169 g/100 mL. What is the solubility of CO₂ at:
 - a) 165 mm Hg ?

 - b) 2.5×10^4 mm Hg ?

3. What is the concentration (m/v)% when 30 mg of glucose is dissolved into enough water to make 200 mL of solution?

4. What is the concentration (m/m)% of gold in an object containing 125 mg gold and 235 mg of other metals?

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5. How many grams of chloroform are in 500 g of water if the chloroform concentration is 75 ppb?

6. Find the ppm concentration of NaF when 16 mg is dissolved into 10 kg of aqueous solution.

7. What is the concentration in molarity (M) for:

a) 0.0050 mol solute dissolved into 25 L of solution?

b) 5.0 g NaOH dissolved into 25 L of solution?

c) 22 mg NaOH dissolved into 85 mL of solution?

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8. What is the concentration in molarity (M) for:

a) diluting 5 mL of 0.0012 M solution into 50 mL

b) diluting 5 mL of 0.0012 M solution into 500 mL

c) diluting 5 mL of 0.0012 M solution into 0.5 L

d) diluting 5 mL of 0.0012 M solution into 5 L

e) diluting 25 mL of 0.05 M solution into 150 mL

9. Use osmotic pressure to explain what would happen to red blood cells placed into pure water.

10. Use $\pi = MRT$ to find the glucose concentration in a solution with osmotic pressure of 7.65 atm at 37 °C.

M = 0.311 M

11. Does $\pi = MRT$ resemble the ideal gas law? (yes/no)