

Ionic Solutions : W.S.-20

- 1) What is an ionic compound?
- 2) What is a solution?
- 3) What is an ionic solution?
- 4) Write down the dissociation equation.
 - a) $\text{HCl(s)} \rightarrow$
 - b) $\text{KF(s)} \rightarrow$
 - c) $\text{CaCl}_2\text{(s)}$
 - d) $\text{Na}_2\text{S(s)} \rightarrow$
 - e) $\text{MgCO}_3\text{(s)} \rightarrow$
 - f) $\text{NH}_4\text{OH(s)}$
- 5) What is molarity?
- 6) Write down the equation for the molarity of a solution.
- 7) Find the molarity of the following solutions;
 - a) 1.2 moles of MgCl_2 are dissolved in 3.7 liters of water.
 - b) 0.48 moles of NaCl are dissolved in 0.85 liters of water.
 - c) 34 grams of KNO_3 is dissolved in 350 mL of water.
- 8) Find the mass of solute required.
 - a) 2.5 L of 0.40 M $\text{Na}_2\text{S(aq)}$
 - b) 920 mL of 3.8 M $\text{CaSO}_4\text{(aq)}$
 - c) 10. L of 6.0 M HCl(aq)
- 9) Find the volume of water required.

- a) 5.2 M NaCl(aq) is prepared from 4.1 mol of NaCl(s)
- b) 0.25 M BaCl₂(aq) is prepared from 0.80 mol of BaCl₂(s)
- c) 3.1 M Na₂SO₄(aq) is prepared from 18g of Na₂SO₄(s)

10) A 5.0 M solution of MgCl₂(aq) is prepared.

- a) Find [Mg²⁺] b) Find [Cl⁻]

11) Concentrated HCl acid has a concentration of 12 M. Find the molarity when 25 mL of concentrated HCl is added to 725 mL of water.

12) If 250 mL of 2.0 M KI is mixed with 350 mL of 1.2 M KI, what is the final concentration of the KI solution?

13) If 190 mL of 2.7 M NaCl is mixed with 520 mL of 1.8 M KCl, what is the final concentration of each ion?

Answers: 1) It is a compound formed from metallic and non-metallic ions., 2) It is a homogeneous mixture., 3) It is a solution that has an ionic solid as a solute., 4)a) HCl(s) -> H⁺(aq) + Cl⁻(aq), b) KF(s) -> K⁺(aq) + F⁻(aq), c) CaCl₂(s) -> Ca²⁺(aq) + 2Cl⁻(aq), d) Na₂S(s) -> 2Na⁺(aq) + S²⁻(aq), e) MgCO₃(s) -> Mg²⁺(aq) + CO₃²⁻(aq), f) NH₄OH(s) -> NH₄⁺(aq) + OH⁻(aq), 5) It is the concentration of a solution in mol/L., 6) M = n/L, 7)a) 0.32 M, b) 0.56 M, c) 0.96 M, 8)a) 78g, b) 480g, c) 2.2 kg, 9)a) 0.79 L, b) 3.2 L, c) 41 mL, 10)a) 5.0 M, b) 10. M, 11) 0.40 M, 12) 1.5 M, 13) [Na⁺] = 0.72 M, [K⁺] = 1.3 M, [Cl⁻] = 2.0 M.