1. Which sample, when dissolved in 1.0 liter of water, produces a solution with the highest boiling point?

   A) 0.1 mole KI   B) 0.2 mole KI
   C) 0.1 mole $MgCl_2$ D) 0.2 mole $MgCl_2$

2. Which solution has the highest boiling point at standard pressure?

   A) 0.10 M KCl(aq)   B) 0.10 M K_2SO_4(aq)
   C) 0.10 M K_3PO_4(aq) D) 0.10 M KNO_3(aq)

3. Compared to the freezing point of 1.0 M KCl(aq) at standard pressure, the freezing point of 1.0 M $CaCl_2$ (aq) at standard pressure is

   A) lower   B) higher
   C) the same

4. Which sample, when dissolved in 1.0 liter of water, produces a solution with the *lowest* freezing point?

   A) 0.1 mol of C_2H_5OH
   B) 0.1 mol of LiBr
   C) 0.2 mol of $C_6H_{12}O_6$
   D) 0.2 mol of $CaCl_2$

5. Which aqueous solution has the *lowest* freezing point?

   A) 1.0 M $C_6H_{12}O_6$ B) 1.0 M C_2H_5OH
   C) 1.0 M CH_3COOH D) 1.0 M NaCl

6. Which 1-molal aqueous solution has the *lowest* freezing point?

   A)

   K^+
   Cl^-

   B)

   Al^{3+} NO_3^-
   NO_3^-
   NO_3^-

   C)

   Mg^{2+}
   Cl^-
   Cl^-

   D)

   $C_{12}H_{22}O_{11}$
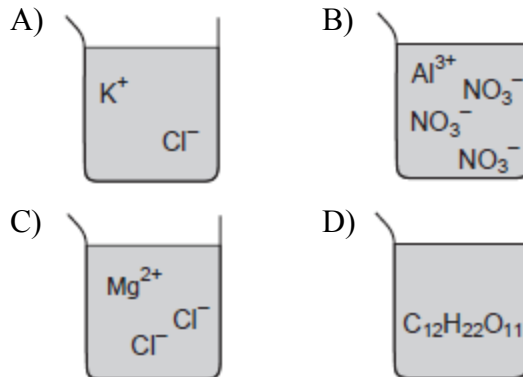
7. Which solution has the highest boiling point?

   A) 1.0 M KNO_3 B) 2.0 M KNO_3
   C) 1.0 M $Ca(NO_3)_2$ D) 2.0 M $Ca(NO_3)_2$

8. A 1 molal solution of $MgCl_2$ has a higher boiling point than a 1 molal solution of

   A) $FeCl_3$ B) $CaCl_2$
   C) $BaCl_2$ D) NaCl

9. A 0.100-molal aqueous solution of which compound has the *lowest* freezing point?

   A) $C_6H_{12}O_6$ B) CH_3OH
   C) $C_{12}H_{22}O_{11}$ D) NaOH

10. A 2.0-molal sugar solution has approximately the same freezing point as a 1.0-molal solution of

   A) $CaCl_2$ B) CH_3COOH
   C) C_2H_5OH D) NaCl