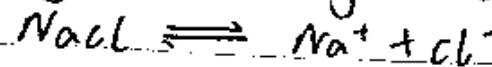
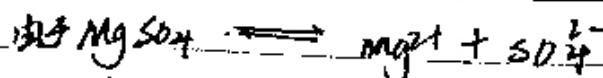


157.5.



Mg^{2+} 所带正电荷是 Na^+ 的两倍，故 ΔT_f 溶液中 MgSO_4 是 NaCl 的两倍而对相同浓度溶液 $c(\text{MgSO}_4)$ 与 $c(\text{NaCl})$ 近似相等，从而

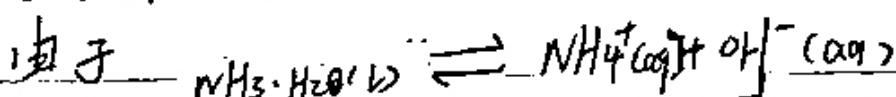
由于 $\Delta T_f = K_f \cdot m$ 而二者 K_f 相近，故 ΔT_f 因此下降大致相同

$$b. T_{fp} = -185.3 \times 0.6 \times 2 = -2.2^\circ\text{C}$$

$$T_{bp} = 100 + 0.515 \times 0.6 \times 2 = 106.2^\circ\text{C}$$

$$\pi = CRT = 0.6 \times 0.83145 \times 298.15 \times 2 = 2974.5 \text{ kPa}$$

11. (1) 表得 $\text{NH}_3 \text{ in } \text{K}_b = 1.77 \times 10^{-5}$



$$\therefore c(\text{OH}^-) = \frac{K_b}{c(\text{NH}_3 \cdot \text{H}_2\text{O})} = 1.87 \times 10^{-3} \text{ mol/L}$$

$$\text{PH} = -\lg \frac{1 \times 10^{-9}}{c(\text{OH}^-)} = 11.27$$

$$\alpha = \frac{c(\text{OH}^-)}{c(\text{NH}_3 \cdot \text{H}_2\text{O})} = 0.935\%$$

$$(2) c(\text{H}^+) = K_a = 5.65 \times 10^{-10}$$

$$c(\text{OH}^-) = 1.77 \times 10^{-5}$$

$$\text{PH} = -\lg c(\text{H}^+) = 9.125$$

$$\alpha = \frac{c(\text{OH}^-)}{c(\text{NH}_3 \cdot \text{H}_2\text{O})} = 0.0089\%$$

(3) 加入 NH_4Cl 会抑制 $\text{NH}_3 \cdot \text{H}_2\text{O}$ 的解离