

Задача 1. Дано:  $\text{HCl} = \text{H}^+ + \text{Cl}^-$   $m_{\pm} = \nu_{\pm} m$   $a_{\pm} = \nu_{\pm} m \gamma_{\pm}$   
 $\text{HCl}$   $m = 7 \frac{\text{моль}}{1000 \text{ г}}$   $\gamma_{\pm} = 1,37$   $\nu_{\pm} = \left( \nu_+^{\nu_+} \nu_-^{\nu_-} \right)^{\frac{1}{\nu_+ + \nu_-}} = (1 \cdot 1)^{\frac{1}{2}} = 1$   $m_{\pm} = 1 \cdot 7 = 7$   $a_{\pm} = 1 \cdot 7 \cdot 4,37 = 30,59$   
 $a_{\pm} = (a_{\pm})^0 = 30,59^2 = 935,74$   
 Ответ:  $m_{\pm} = 7$ ;  $a_{\pm} = 30,59$ ;  $a_{\pm} = 935,74$

Задача 4(23).

Задача 2. Дано:  $\lambda_m(\text{BaSO}_4) = f, (\lambda_0(\text{BaCl}_2) + \lambda_0(\text{MgSO}_4) - \lambda_0(\text{MgCl}_2)) =$   
 $\lambda(\text{BaCl}_2) = 1,40$   $= 1(1,40 + 1,33 - 1,29) = 1,44 \frac{\text{см} \cdot \text{м}^2}{\text{моль}}$   
 $\lambda(\text{MgSO}_4) = 1,33$  Ответ:  $\lambda_m(\text{BaSO}_4) = 1,44 \frac{\text{см} \cdot \text{м}^2}{\text{моль}}$   
 $\lambda(\text{MgCl}_2) = 1,29$   
 $\lambda_m(\text{BaSO}_4) = ?$

Задача 5(23).

Задача 3. Дано:  $K = \frac{p(\text{TiBr})}{p(\text{H}_2\text{O})} = \frac{1}{38} - \frac{1}{10000} = 2,62$   
 $\lambda = (43,3 + 42,6 + (225 + 223 + 105)) \cdot 10^{-4} = 2,8347 \frac{\text{см} \cdot \text{м}^2}{\text{моль}}$   
 $\lambda = \frac{k}{c}$ ;  $c = \frac{2,62 \cdot 10^{-4}}{2,8347} = 9,24 \cdot 10^{-5} \frac{\text{моль}}{\text{л}}$

2)  $\text{A} = \text{TiBr}$ ;  $\text{TiBr} = \text{Ti} + \text{Br}$   $L = a_+ a_-$ ;  $L = m_{\pm}^2 \gamma_{\pm}^2$ ;  $m = \sqrt{L}$   
 $L = 3,6 \cdot 10^{-5} \left( \frac{\text{моль}}{\text{л}} \right)^2$   $m = 6 \cdot 10^{-2} \frac{\text{моль}}{\text{л}}$

3)  $\text{A} = \text{TiBr}$ ;  $\text{B} = \text{KBr}$ ;  $I = 0,01$   $\text{Br} = \text{Br}^-$   
 $= -0,051$   $\gamma_{\pm} = 10^{-0,051} = 0,889$

4)  $\text{A} = \text{TiBr}$ ;  $\text{C} = \text{Na}_2\text{SO}_4$ ;  $I = 0,041$ ;  $\text{Na}_2\text{SO}_4$   
 $\gamma_{\pm} = 10^{-0,102} = 0,791$   $S = m_{\pm} = \frac{1}{m_2 \gamma_{\pm}^2}$

$\lg \gamma_{\pm} = -0,51 \cdot 1,7 + 2 \cdot \sqrt{I} = -0,51 \cdot 1,1 \sqrt{0,01} =$   
 $= \frac{\sqrt{L}}{\gamma_{\pm}} = \frac{\sqrt{3,6 \cdot 10^{-5}}}{0,889} = 6,75 \cdot 10^{-2} \frac{\text{моль}}{\text{л}}$   
 $a + \text{SO}_4^{2-}$   $\lg \gamma_{\pm} = -0,51 \cdot 1 \cdot (-2) \sqrt{0,01} = -0,102$   
 $\frac{1}{791^2} = 3,6 \cdot 10^{-5}$   $5,75 \cdot 10^{-3} \frac{\text{моль}}{\text{л}}$