Elektrokemija 1

1. $\Lambda = 127{,}7$ S cm^2 mol^{-1}

2. $\Lambda = 145{,}2$ S cm^2 mol^{-1}

3. $\Lambda^0 = 125{,}4$ S cm^2 mol^{-1} $b = 66{,}09$

4. $\Lambda^0 = 390{,}3$ S cm^2 mol^{-1} $\alpha = 3{,}7$ %

5. $\alpha = 1{,}34$ % Ka $= 1{,}82 \times 10^{-5}$ mol dm^{-3}

6.

b / mol kg^{-1}	0,001	0,002	0,005	0,01	0,02
$\gamma_{\pm exp}$	0,9649	0,9519	0,9275	0,9024	0,8712
$\gamma_{\pm DHLL}$	0,964	0,949	0920	0,889	0,847

7. $K_a = 3{,}085 \times 10^{-5}$ mol dm^{-3}

8. $s = 2{,}02 \times 10^{-14}$ mol dm^{-3}

Elektrokemija 2

1. $\Delta E = 0{,}621$ V

2. $\gamma_{\pm exp} = 0{,}88$ $\gamma_{\pm DHL} = 0{,}879$

3. $\Delta E = 2{,}477$ V

4. $\Delta E = 0{,}0296$ V

5. $\Delta E = 0{,}126$ V

6. $\Delta_r S° = -57{,}89$ J K^{-1} mol^{-1} $\Delta_r H° = -69{,}04$ kJ mol^{-1} $\Delta_r G° = -51{,}5$ kJ mol^{-1}

7. $K° = 8{,}56 \times 10^{-17}$ $s = 9{,}3 \times 10^{-9}$ mol dm^{-3}

8. $K_w = 10^{-14}$

9. pH $= 4{,}46$

10. $E° = 0{,}37$ V

Kinetika

1. t = 12862 a

2. $\lambda = 2{,}81 \times 10^{-2}$ min^{-1}

3. $v = \dfrac{dc_A}{dt}\dfrac{1}{(-3)} = \dfrac{dc_B}{dt}\dfrac{1}{(-1)} = \dfrac{dc_C}{dt}\dfrac{1}{2} = \dfrac{dc_D}{dt}\dfrac{1}{5} = \dfrac{\Delta c_C}{\Delta t}\dfrac{1}{2} = 1$ mmol dm^{-3}s^{-1}

4. $n_A = 1$, $n_B = 0$

5. $t_{1/2} = 11$ min

6. $c_t(A) = 4{,}1 \times 10^{-2}$ mol dm^{-3}

7. $n = 2$, $k = 0{,}52$ mol^{-1} dm^3 s^{-1}

8. $t_{1/2} = 722$ s, p(10 s) = 507,2 Pa

9. $n = 1$, $k = 2{,}8 \times 10^{-4}$ s^{-1}

10. $n = 2$, $k = 5{,}96 \times 10^{-2} \times 10^{-2}$ s^{-1}

11. $E_a = 136{,}72$ kJ mol^{-1} A = $3{,}13 \times 10^{13}$ s^{-1}

12. $t = 4385$ min

13. $K_M = 1.58 \times 10^{-5}$ mol dm^{-3} $v_{max} = 0{,}21$ μmol dm^{-3} s^{-1}