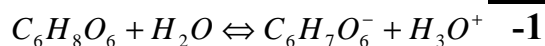


الأجوبة

تمرين 1:



$K = \frac{[C_6H_7O_6^-]_{\acute{e}q} * [H_3O^+]_{\acute{e}q}}{[C_6H_8O_6]_{\acute{e}q}}$ -2

جدول التقدم -3

$[H_3O^+]_{\acute{e}q} = 10^{-pH} = 10^{-3,01} = 9,77.10^{-4} mol.L^{-1}$ -4

إذن التفاعل محدود $\tau = \frac{x_{\acute{e}q}}{x_{max}} = \frac{[H_3O^+]_{\acute{e}q} * V_1}{C_1 * V_1} = 9,77.10^{-3} = 0,98\%$ -5

$[C_6H_7O_6^-]_{\acute{e}q} = [H_3O^+]_{\acute{e}q} = 10^{-pH} = 9,77.10^{-4} mol.L^{-1}$ -6

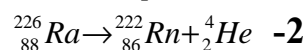
$[C_6H_8O_6]_{\acute{e}q} = C_1 - \frac{x_{\acute{e}q}}{V_1} = C_1 - [H_3O^+]_{\acute{e}q} = 9,9.10^{-2} mol.L^{-1}$

$K = \frac{(9,77.10^{-4})^2}{9,9.10^{-2}} = 9,64.10^{-6}$ -7

تمرين 2:

I

$88p + 138n$ -1



$E = \{m(Rn) + m(He) - m(Ra)\}C^2 = -4,86Mev$ -3

$N(t) = N_0 e^{-\lambda t}$ -4

$\frac{N(t)}{N_0} = e^{-\lambda t} = \exp\left(\frac{\ln 2}{t_{1/2}} t\right) = 0,99$ -5

$\frac{a(t)}{a_0} = \frac{\lambda N(t)}{\lambda N_0} = \frac{N(t)}{N_0} = 0,99$ -6

إي أن $a(t) = 0,99a_0 \approx 1a_0$ إذن نشاط العينة بعد مرور 10 سنوات يساوي تقريبا a_0

II

$a(t) = \lambda N(t)$ -1

$N = \frac{m}{M} N_a = 2,66.10^{21}$ -2

$a = \lambda N = \frac{\ln 2}{t_{1/2}} N = 3,59.10^{10} Bq$ -3

$1Curie = 3,59.10^{10} Bq$ -4

III

$\tau = 5,5 j$ -1

أ- التعريف.

ب- $t_{1/2} = \tau \ln 2$

ت- $t_{1/2} = 5,5 \ln 2 = 3,81 j$