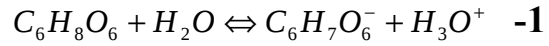


الأجوبة

تمرين 1:



-2 $K = \frac{[C_6H_7O_6^-]_{\text{éq}} * [H_3O^+]_{\text{éq}}}{[C_6H_8O_6]_{\text{éq}}}$

-3 جدول التقدم

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

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

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

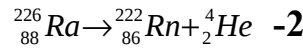
$[C_6H_8O_6]_{\text{éq}} = C_1 - \frac{x_{\text{éq}}}{V_1} = C_1 - [H_3O^+]_{\text{éq}} = 9,9.10^{-2} \text{ mol.L}^{-1}$

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

تمرين 2:

-I

-1 $88p + 138n$



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

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

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

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

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

-II

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

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

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

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

-III

-1 $\tau = 5,5 \text{ j}$

-2 أ- التعريف.

ب- $t_{1/2} = \tau \ln 2$

ت- $t_{1/2} = 5,5 \ln 2 = 3,81 \text{ j}$