

2008/2007 :

3 :

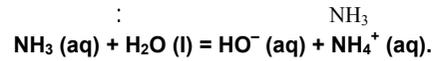
3 :

التجارب الثاني في مادة العلوم الفيزيائية

التمرين الأول: (04 نقاط)

22° Bé

$C_0 = 10,9 \text{ mol.L}^{-1}$.S₀



$Q_{r, \text{eq}} = 1,58 \cdot 10^{-5}$;
 $K_e = 1,00 \cdot 10^{-14}$;

1. S₀ : pH
2. S₁ : pH
3. S₁ : $[\text{HO}^-]_{(\text{S}_1)} = 4,2 \cdot 10^{-3} \text{ mol.L}^{-1}$;
4. S₁ : pH
5. S₁ : $V^*_1 = 1,0 \text{ L}$
6. S₁ : $Q_{r,1}$

التمرين الثاني: (04 نقاط)

.HA

$C_B = 5,00 \cdot 10^{-2} \text{ mol.L}^{-1}$.Na⁺_(aq) + HO⁻_(aq) :

$V_A = 20,0 \text{ mL}$

1. pH : V_B
2. K
3. HA/A⁻ : pK_{A3} = 3,9

H₂O/HO⁻ : pK_{A1} = 14,0
 H₃O⁺/H₂O : pK_{A2} = 0,0
 HA/A⁻ : pK_{A3} = 3,9

:

V _B (mL)	0	2,0	4,0	6,0	8,0	10	11	11,5	12	12,5	13	14	16
pH	2,9	3,2	3,6	3,9	4,2	4,6	4,9	6,3	8,0	10,7	11,0	11,3	11,5

$(V_B = 0)$.3

$V_B = 12,0 \text{ mL}$.4

$1,8 \text{ g.L}^{-1}$.5

1L

$M(\text{HA}) = 90 \text{ g.mol}^{-1}$:

التمرين الثالث: (04 نقاط)

$R = 50 \Omega$

$E = 6V$

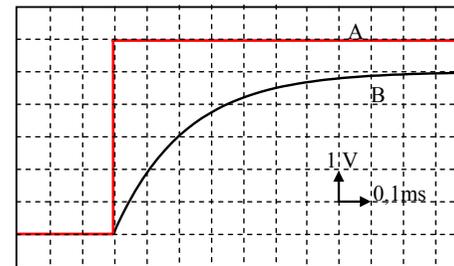
1. (1)
2. i(t)
3. i(t)
4. L i
5. r
6. τ
7. L

التمرين الرابع: (04 نقاط)

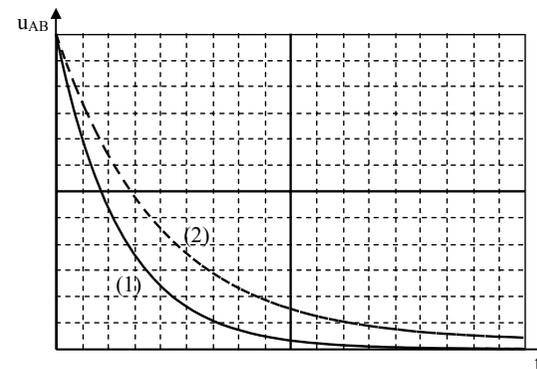
1. " " "
2. (2,1.10⁷ °C)
3. ${}^4_2\text{He} : 4$; ${}^3_2\text{He} : 3$; ${}^2_1\text{H} :$; $({}^1_1\text{H}) :$; $({}^4_2\text{X})$
4. 3

ملحق :

حالة الجملة		NH ₃	+	H ₂ O	=	HO ⁻	+	NH ₄ ⁺
0	n ₁ =			تزايد				
x								
x _f =								
x _{max} =								

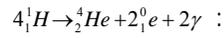


(1)



(2)

$$4 \quad .4$$

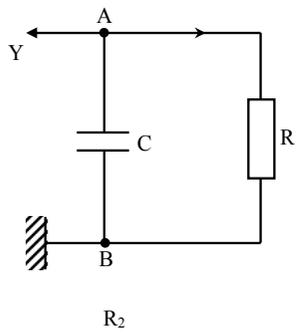


${}_1^1\text{H} : 1,0073 \text{ u}$ ${}_2^4\text{He} : 4,0026 \text{ u}$ ${}_1^0\text{e} : 0,0006 \text{ u}$
 935 MeV 1u ($\approx 1000 \text{ MeV}$)

0,6 MeV 6 MeV 60 MeV
 720

4 500 tonnes 45 000 tonnes 450 000 tonnes 4 500 000 tonnes

التمرين الخامس: (04 نقاط)



$u_{AB} > 0$ $C = 5,0 \mu\text{F}$ $.U_0$

1 ms/div:
 .1 V/div :
 $t = 0$

u_{AB} .1

$R_1 = 500 \Omega$.2

(2) 1

.2

$.U_0$

.3

R_1

R_2

R_2

.4

$.t = 7,0 \text{ ms}$

R_1

R_1