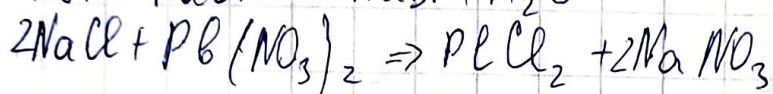
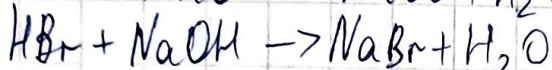
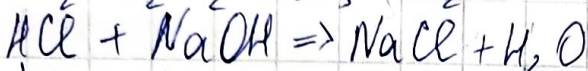
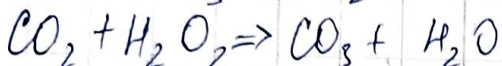
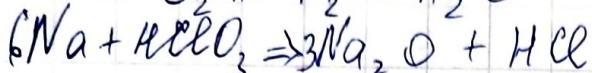
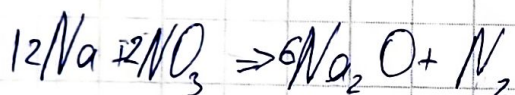


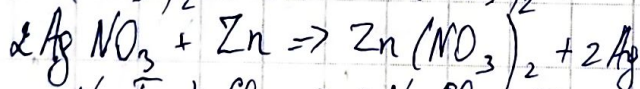
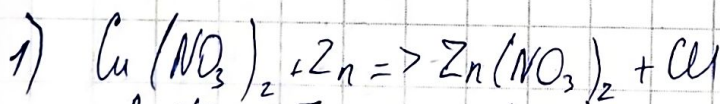
N1.



N2.



N3.

a) $m(\text{Zn}) = ?$

$$\frac{m}{M} = \frac{V}{V_{\text{г.р.}}} \Rightarrow m = \frac{V \cdot M(\text{Cu}(\text{NO}_3)_2)}{V_{\text{г.р.}}} = \frac{100 \cdot 188}{22,4} = 839,2$$

$$M(\text{Cu}(\text{NO}_3)_2) = 64 + (14 + 16 \cdot 3) \cdot 2 = 188; M(\text{AgNO}_3) = 108 + 14 + 16 \cdot 3 = 170$$

$$m = \frac{V \cdot M(\text{AgNO}_3)}{V_{\text{г.р.}}} = \frac{100 \cdot 170}{22,4} = 758,2$$

N3.

3) $V(Cl) = ?$

$$V = \frac{V}{V_{Br}}$$

$$V = \frac{50}{22,4} = 2,232. \quad \text{Жауабы: } V(Cl) = 2,232 \text{ моль.}$$

N4.

1) $B(I) = \frac{1}{2,5-1} \left((1,6 \cdot 10^{-19})^{-2} - 3(1,6 \cdot 10^{-19})^{-5} \right) \cdot 1 = 0,5.$

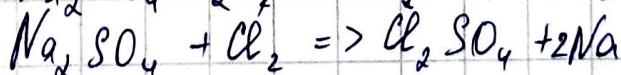
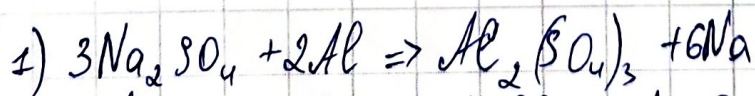
N5.

3) $V = ?$

$$pV = \nu RT \Rightarrow V = \frac{\nu RT}{p}; \quad T = (273 + 25) K = 298 K$$

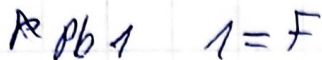
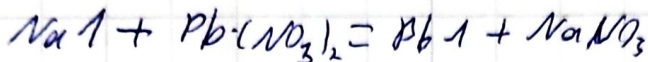
$$V = \frac{1,8,31 \cdot 298}{1} = 2476,38 \text{ л}$$

2) Сөбебі, таза суық электрлізін алу үшін, натрий сульфатының сулы ерітіндісі қажет.



4) қосымдардың айырмашылықтарының жерінен пайда болды?

N1

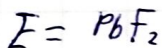


$\frac{86,61}{204} : \frac{13,39}{11(1)}$

$0,41 : 0,40 \quad | : 1,41$

$1 : 1,41$

~~52 : 5~~



$\frac{86,61}{204} : \frac{13,39}{55,5}$

$\frac{86,61}{204} : \frac{13,39}{127}$

$0,41 : 0,187 \quad | : 2,17$

$0,41 : 0,11 \quad | : 3,73$

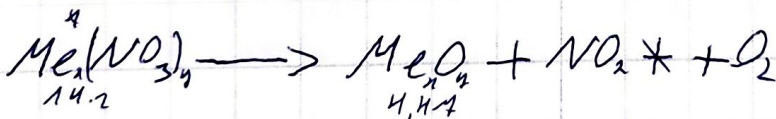
$2,11 : 1 \quad | : 1,05$

$3,73 : 1$

$12 : 5$

Не березген.

N2



~~$m(Mn)$~~ $m(Mn) = 4,47 \cdot 0,684 = 3,062$

$m(O_2) = 4,47 - 3,06 = 1,412$

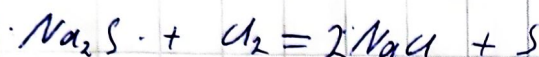
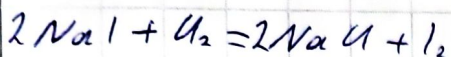
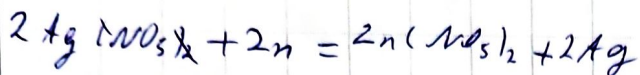
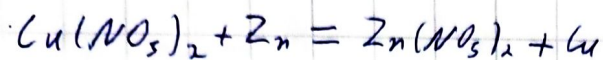
$\frac{68,4}{M(Mn)} : \frac{31,2}{16} = \frac{68,4}{M(Mn)} : 1,975 \quad | : 1,975 =$

$\frac{34,63}{M(Mn)} : 1 = 3,06 : 1,41$

$\frac{34,63}{M(Mn)} \cdot X = 3,06$

3

3.1

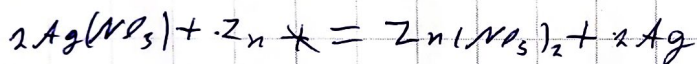


3.2



$$m(\text{NaCl}) = \omega(\text{NaCl}) \cdot V_{\text{р-н}} = 9,25 \cdot 10 = 0,52$$

$$n(\text{NaCl}) = \frac{0,52}{58,5} = 0,009 \text{ моль} \Rightarrow n(\text{Zn}) = \frac{0,009}{2} = 0,0045 \text{ моль}$$



$$m(\text{Zn}) = 0,0045 \cdot 65 = 0,2925$$



$$\omega(\text{Cu}(\text{NO}_3)_2) = \omega(\text{AgNO}_3) \Rightarrow n(\text{Cu}(\text{NO}_3)_2) = n(\text{AgNO}_3) \Rightarrow \omega = \frac{m}{V}$$

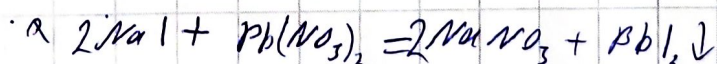
$$m(\text{Zn}) = 0,009 \cdot 65 = 0,585$$

$$m(\text{Zn})_{\text{барлығы}} = 0,585 + 0,2925 = 0,8775$$

3.3

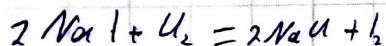
Әулет: жұмыс 0,8775 г Zn

3.3



$$m(\text{Pb}(\text{NO}_3)_2) = \omega(\text{Pb}(\text{NO}_3)_2) \cdot V_{\text{р-н}} = 6 \cdot 10^{-4} \text{ г}$$

$$n(\text{Pb}(\text{NO}_3)_2) = \frac{6 \cdot 10^{-4}}{331} = 0,018 \cdot 10^{-4} \text{ моль} = n(\text{Cl}_2)$$



$$\text{24} \quad [A]_0 = \frac{[A]}{e^{-k_1 t}} = \frac{2}{(1,602 \cdot 10^{-11})^{-2}} = \frac{2}{e^2}$$

$$[B]_{2c} = \frac{k_1}{k_2 - k_1} (e^{-k_1 t} - e^{-k_2 t}) \cdot [A]_0 = \frac{1}{2,5 - 1} ((1,602 \cdot 10^{-11})^{-2} - (4,602 \cdot 10^{-11})^{-2})$$

$$[B]_{2c} \cdot [A]_0 = 0,667 \left(\frac{1}{2,511 \cdot 10^{58}} - \frac{1}{10,55 \cdot 10^{95}} \right) \cdot [A]_0 = 0,667 \left(\frac{1}{e^{-2}} - \frac{1}{e^{-5}} \right) \cdot \frac{2}{e^2}$$

$$= 0,667 \left(2 - \frac{2e^2}{e^2} - \frac{2e^5}{e^2} \right) = 0,667 (2 - 2e^3) = 0,667 (2 - \frac{2}{e^3})$$

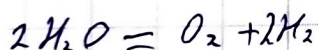
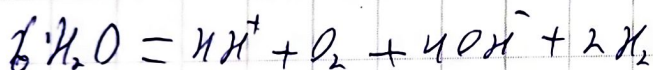
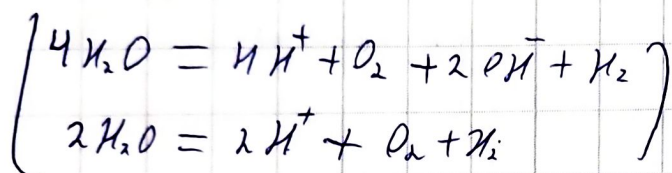
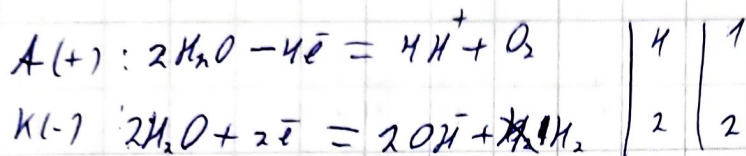
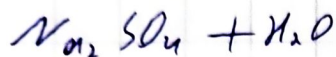
$$= 0,667 \left(2 - \frac{2}{4,111 \cdot 10^{-57}} \right) = 0,667 \left(2 - \frac{2 \cdot 10^{57}}{4,111} \right) \Rightarrow [B]_{2c} \ll 0$$

24.2

$$[C](t) = [A]_0 - ([A](t) + [B](t))$$

5

5.1



5.2

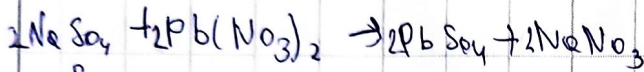
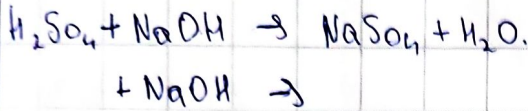
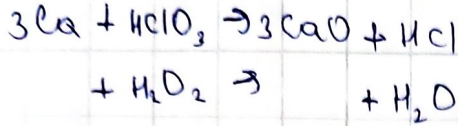
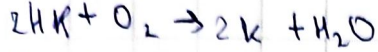
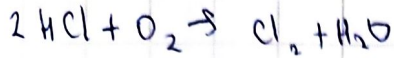
Нәтижесінде электролитте, өзге қалыпта
себе өзге кетсе де, провадиртис тек.

5.3

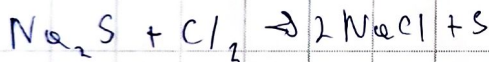
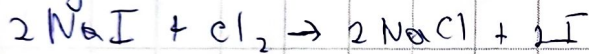
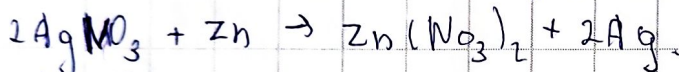
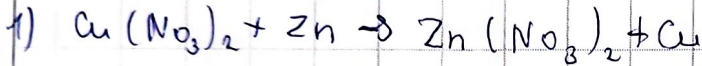
$$V_{\text{H}_2} = n \cdot 22,4 = \frac{m}{M} \cdot 22,4$$

$$m(\text{H}_2) = \frac{n \cdot F}{F}$$

№ 1 Есеп.



№ 3 Есеп.



2) Есеп

$$V(\text{AgNO}_3) = 100 \text{ мл}$$

$$V(\text{Cu}(\text{NO}_3)_2) = 100 \text{ мл}$$

$$\rho_{\text{AgNO}_3} = 1,18 \text{ г/мл}$$

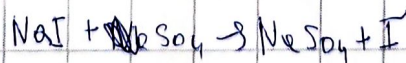
$$\rho_{\text{NaCl}} = 1,0 \text{ г/мл}$$

3) Есеп

$$V(\text{NaI}) = 50 \text{ мл}$$

$$V(\text{Na}_2\text{SO}_4) = 50 \text{ мл}$$

$$n(\text{Cl}_2) = ?$$



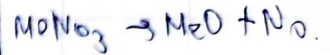
№ 2 Есеп

$$m(\text{XNO}_3) = 142$$

$$m(\text{MeO}_3) = 4,472$$

$$\omega(\text{MeI}) = 68,4\%$$

Т.б. Me-?



$$n(\text{NO}_3) = \frac{14}{62} = 0,22$$

$$\omega(\text{NO}_3) = 4,48\%$$

$$\omega(\text{O}_2) = 27,12\%$$

W^o 4.

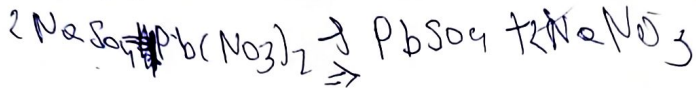
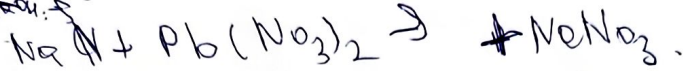
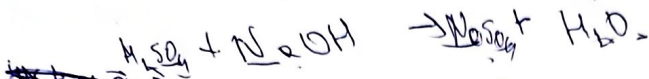
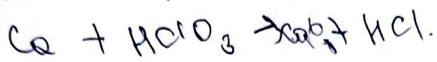
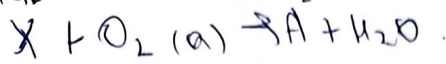
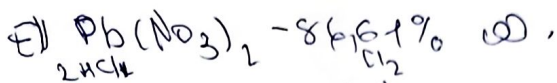
ch-10-3

$$A(t) = \frac{k_1}{k_2 - k_1} (e^{-k_1 t} - e^{-k_2 t}) \cdot [A]_0$$

$$A(t) = \left(\frac{1}{2,5 \text{ s}^{-1} - 1} (e^{-1 t} - e^{-2,5 \text{ s}^{-1} t}) \right) \cdot 2 = 4 (e^{-1 t} - e^{-2,5 \text{ s}^{-1} t})$$

$$B(t) = \left(\frac{3}{3,5 \text{ s}^{-1} - 3} (e^{-3 t} - e^{-3,5 \text{ s}^{-1} t}) \right) \cdot 2 = 12 (e^{-3 t} - e^{-3,5 \text{ s}^{-1} t})$$

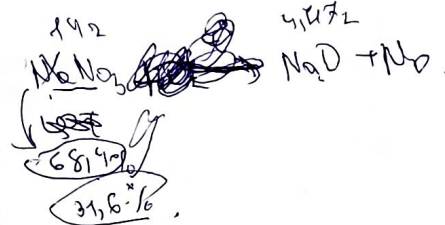
$$r_c = 2,5 \text{ s}^{-1} \cdot 12 = 18$$



$m_1(X) = 142$

$m_2(X_2) = 4,412$

$\omega = 68,4\%$

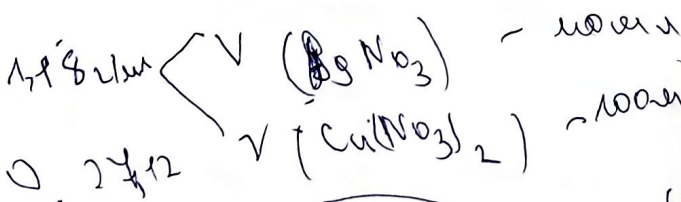
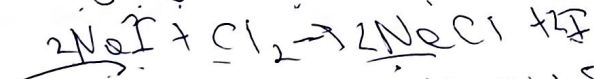


$n = \frac{14}{62} = 0,22$

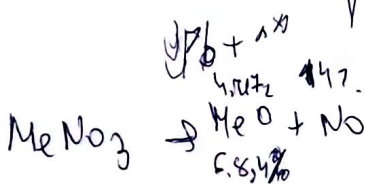
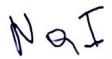
$n(NO_3) =$



$\omega = n \cdot V = 4,418$



$m(Zn) = ?$



$\frac{1}{2,5e^{-1} - 1} (e^{-k_1 t} - e^{-k_2 t}) = 2$

$= \frac{1,13}{0,75} (e^{-2t} - e^{2,5t}) \cdot 2$

$= 1,47 (e^{-1t} - e^{2,5t}) \cdot 2$

$e^{-1t} - e^{2,5t}$

~~log~~

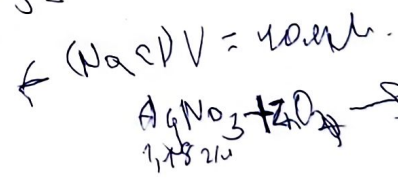
$A(t) = 2 \cdot t$

$-0,2 \int = 0,5$

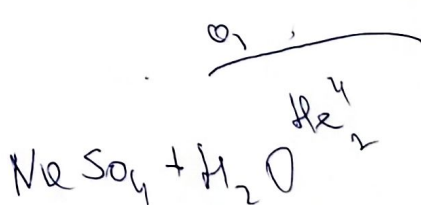
$2,5e^{-1} \cdot 34 = 8,5e^{-1}$

~~3,5, 4,5~~

9,5



$\omega = \frac{100}{10} \cdot 100\% = 83,2\%$

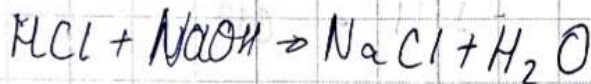
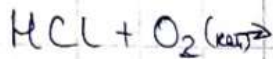


6

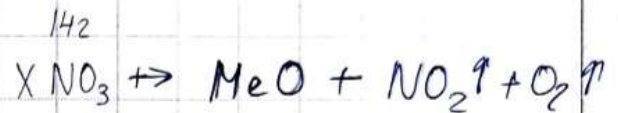
~~12, 1, 1~~

Берілгені

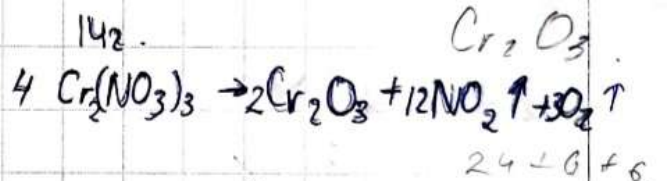
$x = e \cdot \frac{1}{n}$
1 Есеп



2 Есеп

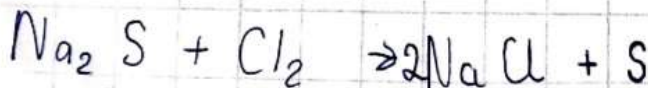
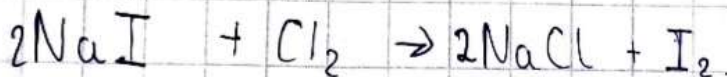
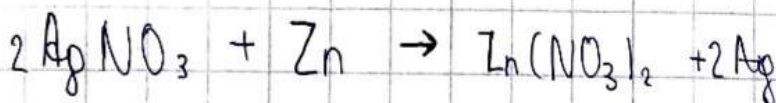


$$\begin{aligned} &MeO = 4,472 \\ &64,8\% \quad 35,2\% \quad 2,2 \\ &M \end{aligned}$$



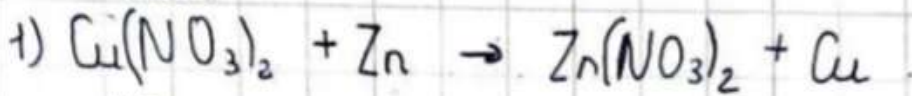
$$w(Cr) Cr_2O_3 = \frac{n \cdot Ar}{Mr} \cdot 100\% = \frac{52 \cdot 2}{152} = 64,8\%$$

3 Есеп

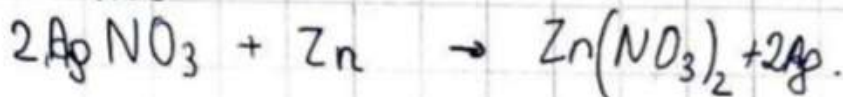


3 Есеп (2),

1182



1182



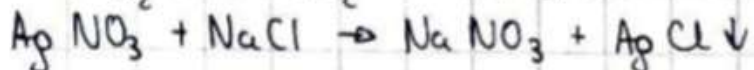
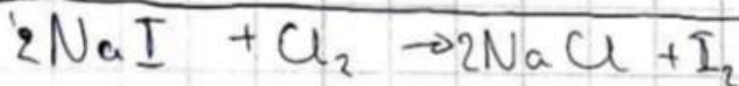
$$n(\text{CuNO}_3)_2 = 2521 \text{ г/моль}$$

$$n = \frac{m}{M} = \frac{1182}{2522 \text{ г/моль}} = 0,46 \approx 0,5 \text{ моль}$$

$$n_2 = \frac{m}{M} = \frac{1182}{2 \cdot 252 \text{ г/моль}} = 0,23 \approx 0,2$$

$$m(\text{Zn}) = 0,5 \text{ моль} \cdot 65 \text{ г/моль} = 32,5 \text{ г}$$

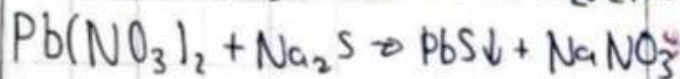
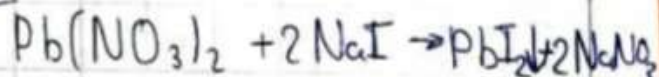
$$m_2(\text{Zn}) = 0,23 \cdot 65 \text{ г/моль} = 14,95 \text{ г}$$



$$n(\text{AgNO}_3) = n(\text{NaCl}) = C(\text{NaCl}) \cdot V(\text{NaCl})$$

$$n(\text{Cu}(\text{NO}_3)_2) = \frac{M(\text{AgNO}_3) \cdot n(\text{AgNO}_3)}{M(\text{Cu}(\text{NO}_3)_2)}$$

4 Есеп



$$n(\text{Pb}(\text{NO}_3)_2) = \frac{1}{2} \cdot n(\text{NaI}) + n(\text{Na}_2\text{S}) = n(\text{Cl}_2)$$

$$C(\text{Pb}(\text{NO}_3)_2) \cdot V(\text{Pb}(\text{NO}_3)_2)$$

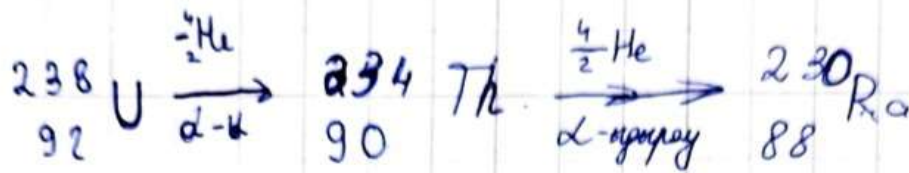
$$n(\text{Cl}_2) = 0,1 \cdot 0,6 \cdot 0,05 = 0,003 \text{ моль}$$

$$[B]_t = \frac{1c^{-1}}{2,5c^{-1} - 1c^{-1}} \left((1,602 \cdot 10^{-19} \text{ Кн})^{-1} e^{-1 \cdot x} - (1,602 \cdot 10^{-19} \text{ Кн})^{-2,5} e^{-2,5 \cdot x} \right) = 2 \text{ моль}$$

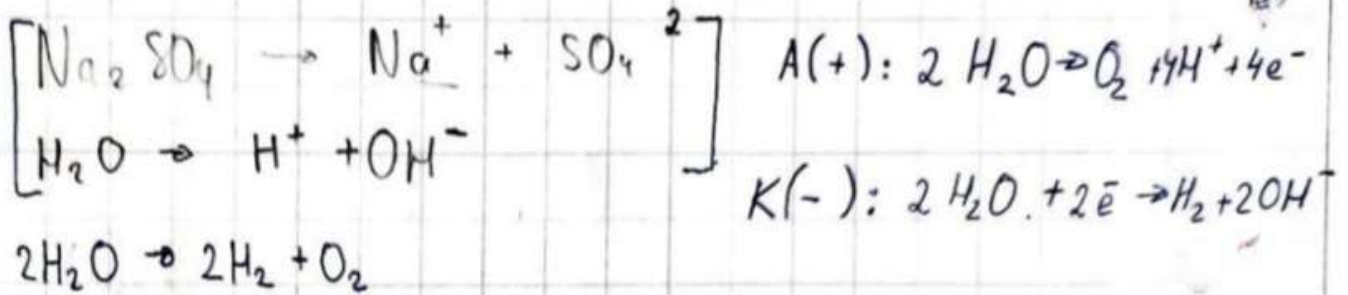
$$[C]_t = [A]_0 e^{-k_1 t} = 0,171 \text{ моль}$$

$$r_c = k_2 [B]_t \quad r_c = 2,5 \frac{1c^{-1}}{2,5c^{-1} - 1c^{-1}} \left(1,602 \cdot 10^{-19} \text{ Кн} \right)^{-1} e^{-1 \cdot x} - 1,602 \cdot 10^{-19} \text{ Кн}^{-2,5} e^{-2,5 \cdot x}$$

4 Есеп.



5 Есеп

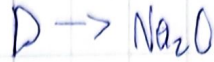
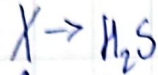


2. Электромиз - ток арқылы және де зарядталған. иондардың арасында жүреді: Яғни таза (дистельденген суда электролиз жүру қиыны тәмен). Су сіз диссоциациялайды.

5.3. Электромизден кейін де ерітіндіде су қалыптама реакцияға қатысқан электролиздену саны арқылы байынан қозғалудың мөлшерін анықтауға болады.

5.4. Идеал газ - молекула - кинетикасының теориясына сәйкес газ моделі. Әрбір газдың атом H_e молекула көлемі көңі кендістіктері күште ретінде болып табылады. Газдың бөлек бөліктерінің арасында ешқандай өзара әрекеттестік жоқ. Б факторының бұл жағдайда көлемі нәтижесі емес. Ал а факторы арасында өзара әрекеттестік бар. - олар бір-біріне тартылады.

①



②

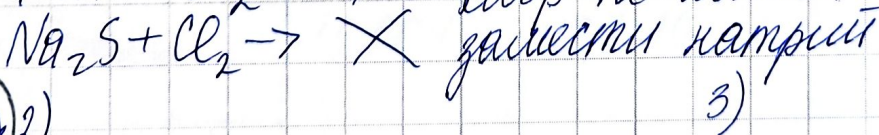
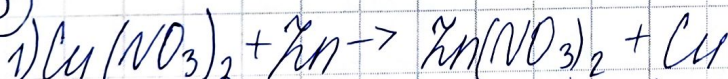
$$m(\text{MeNO}_3) = 142$$

$$m(\text{MeO}) = 4,472$$

$$w(\text{Me}) = 68,4\%$$

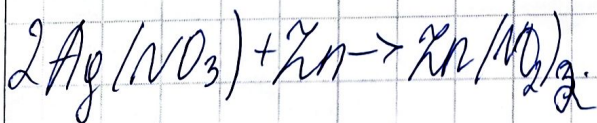
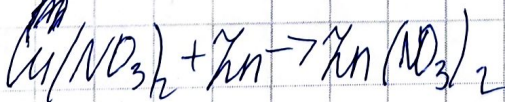
Me

③



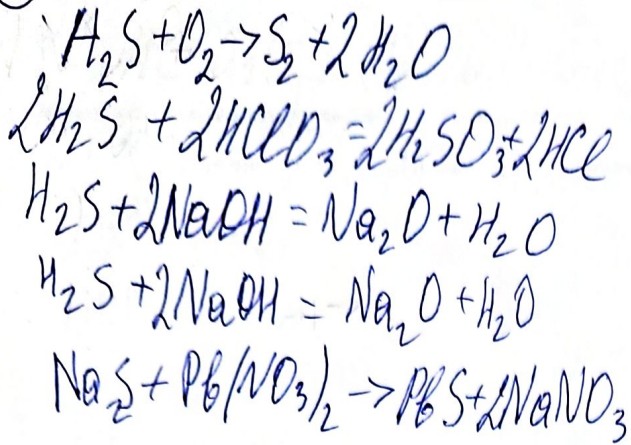
3)

④

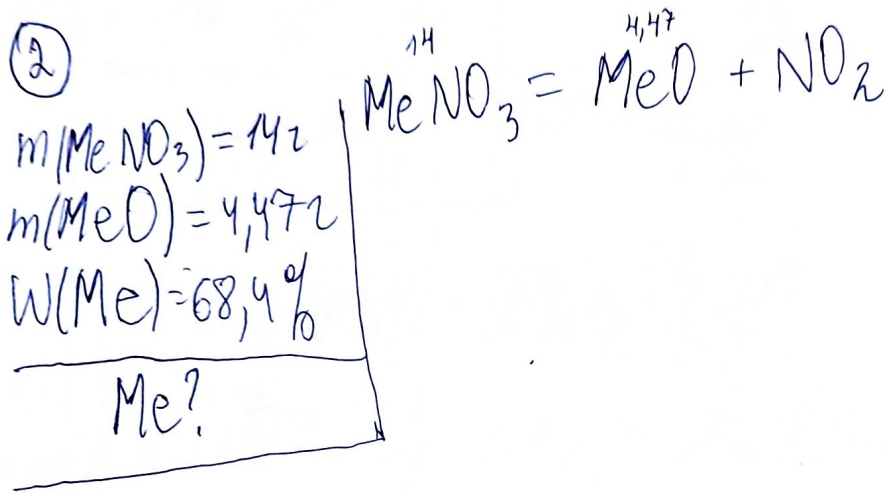


Ch-10-5

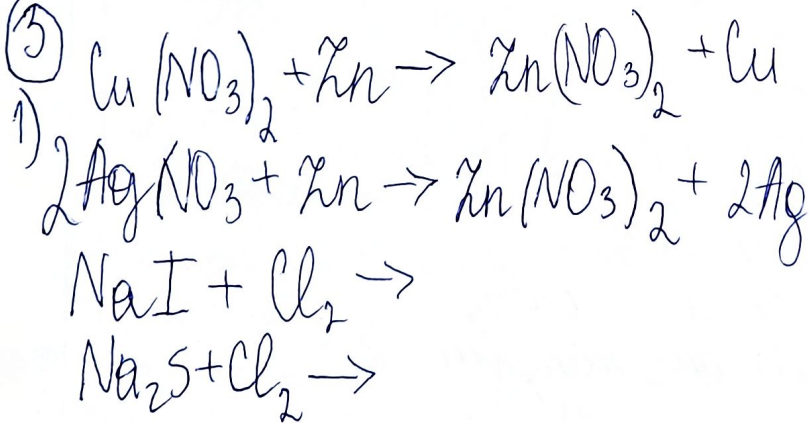
①



②



③



$$\begin{aligned} \rho &= 1,882 \text{ g/cm}^3 \\ \rho &= 1,882 \text{ g/cm}^3 \end{aligned}$$

4)

$$\begin{aligned} 1) t &= 2c \\ [A]_0 &= 2 \text{ моль} \cdot \bar{c}^{-1} \\ k_1 &= 1c^{-1} \\ k_2 &= 25c^{-1} \end{aligned}$$

$$[B] = \frac{k_1}{k_2 - k_1} (e^{-k_1 t} - e^{-k_2 t}) [A]_0 =$$

$$= \frac{1}{25 - 1} (1,6 \cdot 10^{19-2} - 1,6 \cdot 10^{-19-5}) \cdot 2 =$$

$[B] = ?$

$$= 2,144 \text{ моль} \cdot \bar{c}^{-1}$$

$$2) [A]_0 = [A](t) + [B](t) + [C](t)$$

$$[C](t) = [A]_0 - ([A](t) + [B](t)) = [A]_0 - [A](t) - [B](t) =$$

$$= [A]_0 - \frac{k_1}{k_2 - k_1} (e^{-k_1 t} - e^{-k_2 t}) [A]_0 - \frac{k_1}{k_2 - k_1} (e^{-k_1 t} - e^{-k_2 t}) [A]_0$$

$$3) t = 5c$$

$$\begin{aligned} V &= 15 \text{ л} \\ n &= 0,6 \text{ моль} \\ k_1 &= 1c^{-1} \\ k_2 &= 25c^{-1} \end{aligned}$$

$$[A]_0 = \frac{n}{V} = \frac{0,6}{150} = 4 \cdot 10^{-3} \text{ моль}$$

$$[C] = \frac{k_1}{k_2 - k_1} (e^{-k_1 t} - e^{-k_2 t}) [A]_0 = 0,67 \cdot 1,6 \cdot 10^{-2}$$

$$= 0,004 = 428,8 \cdot 10^{-15} \text{ моль} \cdot \bar{c}^{-1}$$

$[C] = ?$

4)

1) $t = 2c$

$[A]_0 = 2 \text{ моль} \cdot \text{л}^{-1}$

$k_1 = 1 \text{ с}^{-1}$

$k_2 = 2,5 \text{ с}^{-1}$

$[B](t) = ?$

$$[B] = \frac{k_1}{k_2 - k_1} (1,6 \cdot 10^{-19} - 1,6 \cdot 10^{-19 - k_2 t}) \cdot [A]_0 =$$

$$= \frac{1}{2,5 - 1} (1,6 \cdot 10^{-19} - 1,6 \cdot 10^{-19 - 5}) \cdot 2 = 0,67 \cdot (1,6 \cdot 10^{-21}) \cdot 2 =$$

$$= 1,072 \cdot 2 = 2,144$$

2) $[A]_0 = [A](t) + [B](t) + [C](t)$

$$[C](t) = [A]_0 - ([A](t) + [B](t)) = [A]_0 - [A](t) - [B](t) = [A]_0 - \frac{k_1}{k_2 - k_1} (e^{k_1 t} - e^{k_2 t}) \cdot [A]_0 + \frac{k_1}{k_2 - k_1} (e^{k_1 t} - e^{k_2 t}) \cdot [A]_0$$

3) $t = 5c$

$V = 150 \text{ мм}^3$

$n = 0,6 \text{ моль}$

$k_1 = 1 \text{ с}^{-1}$

$k_2 = 2,5 \text{ с}^{-1}$

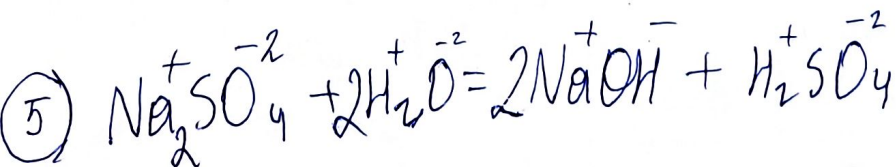
$[C] = ?$

$$[A] = \frac{n}{V} = \frac{0,6}{150} = 0,004 \text{ моль}$$

$$[C] = \frac{1}{2,5 - 1} (16 \cdot 10^{-19} - 16 \cdot 10^{-19 - 5}) \cdot 4 \cdot 10^{-3} = 0,67 \cdot 16 \cdot 10^{-21} \cdot 10^{-3} =$$

$$= 428,8 \cdot 10^{-15}$$

4)



K:

A:

сн-10-5

Шифрды ұйымдастырушы толтырады
Шифр заполняется организатором

Қатысушының шешімдерін толтыруға арналған өріс / Поле для заполнения решений участника Парақ / Страница № 3

5)

3)

$$T = 25^{\circ}\text{C}$$

$$t = 10,5 \text{ мин} =$$

$$= 630 \text{ с}$$

$$p = 1 \text{ атм}$$

$$p = \frac{nRT}{V-n} \Rightarrow V = \frac{nRT}{p-n} = \frac{1 \cdot 8,31 \cdot 25}{1-1} =$$

$$= 207,8 \text{ мм}$$

$$V = ?$$

CH-10-5

5

$$3) T = 25^{\circ}\text{C}$$

$$L = 630\text{C} (10,5\text{mm})$$

$$p = 1\text{atm}$$

$$V = ?$$

$$P = \frac{nRT}{V-n} \Rightarrow V = \frac{nRT}{P-n} = \frac{1 \cdot 8,31 \cdot 25}{1 - 1} = 207,8$$