

1	2	3	4	5	6	7	8	9	10
6	1	1	2	5	5	2	12	14	2

515

✓

1.2) $m = 1000 \text{ г}$

$\omega(\text{MgZn}_2(\text{PO}_4)_2 \cdot 4\text{H}_2\text{O}) = 0,8$

$\omega(\text{ZnO}) = 0,15$

$m(\text{MgZn}_2(\text{PO}_4)_2 \cdot 4\text{H}_2\text{O}) = 1000 \cdot 0,8 = 800 \text{ г}$

$m(\text{ZnO}) = 1000 \cdot 0,15 = 150 \text{ г}$

$n(\text{MgZn}_2(\text{PO}_4)_2 \cdot 4\text{H}_2\text{O}) = \frac{800}{416} = 1,923 \text{ моль}$

$n(\text{Zn}) = 1,923 \cdot 2 + 1,852 = 5,698 \text{ моль}$

$m(\text{Zn}) = 5,698 \cdot 65 = 370,37 \text{ г}$

$\omega(\text{Zn}) = \frac{370,37}{1000} = 0,37037 \approx 0,37 (37\%)$

Ответ: 37%

2.2) 1.

2. HCl

Cl^- содержит $18e^-$, одноосновная к-та для Cl^- HCl

15

HCl +

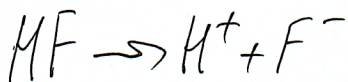


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4.2 $V(\text{HF}) = 1,55 \text{ л}$

$0,1 \text{ М} = 0,1 \text{ моль/л}$



2

$n(\text{HF}) = 1,55 \cdot 0,1 = 0,155 \text{ моль}$

$n(\text{H}^+) = n(\text{F}^-) = 0,155 \text{ моль}$

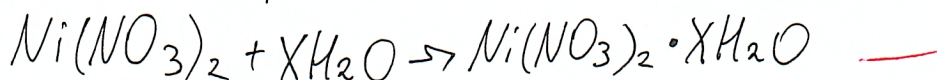
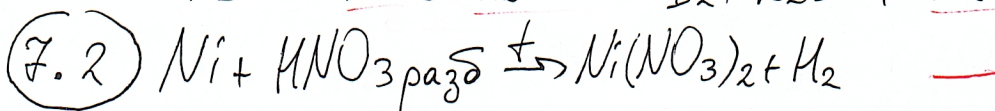
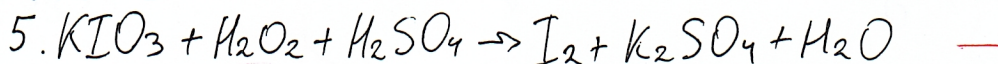
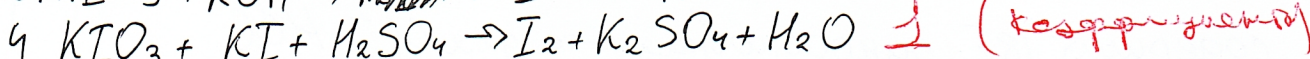
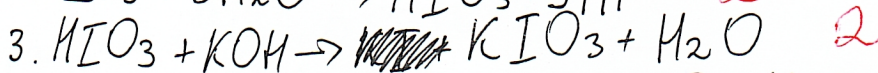
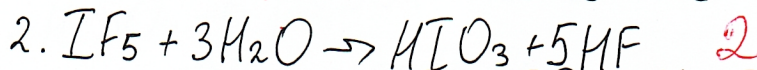
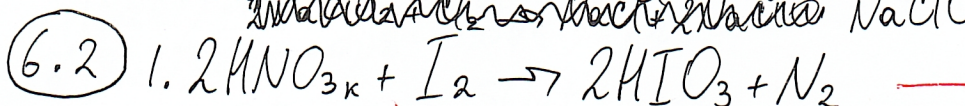
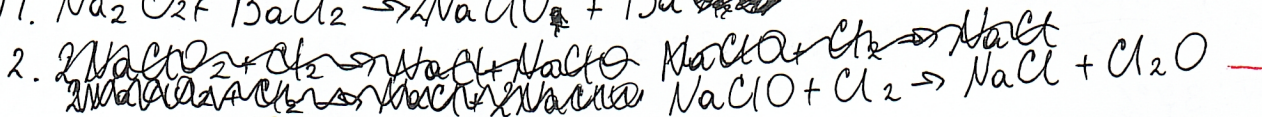
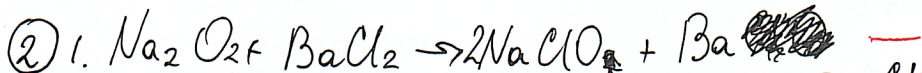
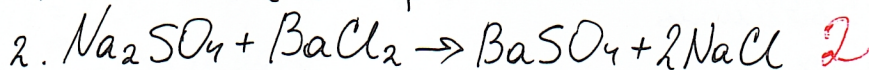
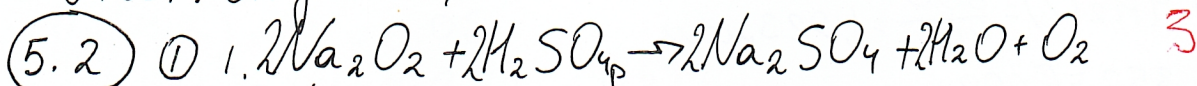
$\frac{n(\text{HF})}{n(\text{H}^+) \cdot n(\text{F}^-)} = \frac{0,155}{0,155^2} = 6,452 \text{ моль}$

$6,452 \cdot 6,02 \cdot 10^{23} = 38,84 \cdot 10^{23}$

$1,07 \cdot 10^{23}$

$\frac{1,07 \cdot 10^{23}}{38,84 \cdot 10^{23}} = 0,026 (2,6\%)$

Ответ: ст. дис. = 2,6%



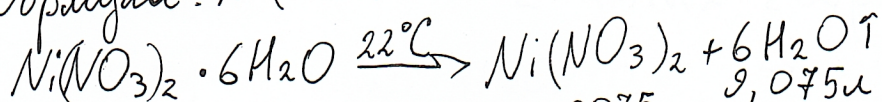
$$\frac{m(N)}{m(O)} = \frac{1}{6,857}$$

$$\frac{14 \cdot 2}{6 \cdot 16 + 16x} = \frac{1}{6,857}$$

$$191,996 = 96 + 16x$$

$$x = 5,99975 \approx 6$$

Формула: $Ni(NO_3)_2 \cdot 6H_2O$ + 35

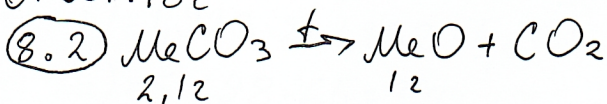


$$n(H_2O) = \frac{pV}{RT} = \frac{101325 \cdot 0,009075}{8,314 \cdot (273,15 + 22)} = 0,374 \text{ моль}$$

$$n(Ni(NO_3)_2 \cdot 6H_2O) = \frac{0,374}{6} = 0,06245 \text{ моль}$$

$$m(Ni(NO_3)_2 \cdot 6H_2O) = 0,06245 \cdot (108 + 124 + 59) = 291 \cdot 0,06245 = 18,17295 \approx 182$$

Ответ: 182



$$M(Me) = x$$

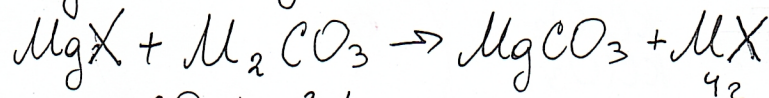
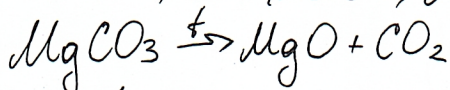
$$\frac{2,1}{x+60} = \frac{1}{x+16}$$

$$2,1x + 33,6 = x + 60$$

$$1,1x = 26,4$$

$$x = 24$$

$$M(Me) = 24 \text{ г/моль} \Rightarrow Me - Mg$$



$$n(MgCO_3) = \frac{2,1}{84} = 0,025 \text{ моль}$$

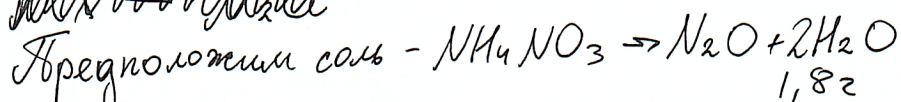
$$n(MX) = \frac{4}{0,025} = 160 \text{ г/моль}$$



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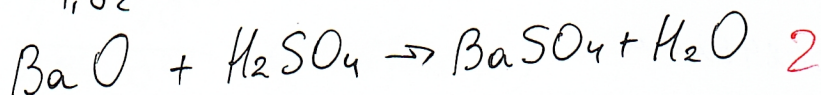
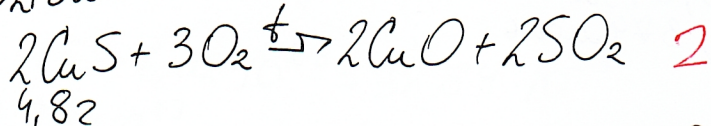
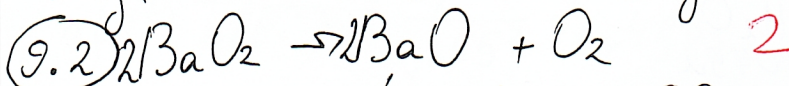
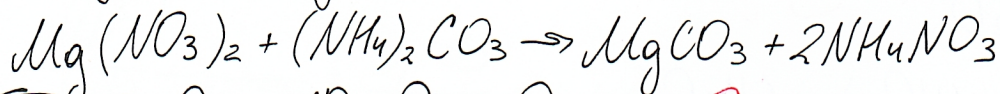


Проверка:

$$n(H_2O) = \frac{1,8}{18} = 0,1 \text{ моль} \quad n(NH_4NO_3) = 0,05 \text{ моль}$$

$$M(NH_4NO_3) = 0,05 \cdot 4 = 80^2 / \text{моль} - \text{верно}$$

Вещества: $Mg(NO_3)_2$; $(NH_4)_2CO_3$



$$m(p - p_a) = 220,52$$

$$\omega(H_2SO_4) = 8\% = 0,08$$

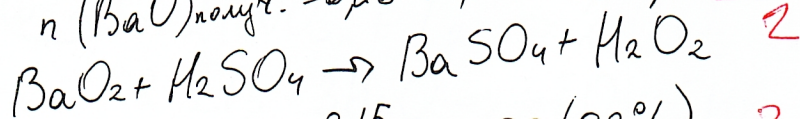
$$m(\text{H}_2\text{SO}_4) = 220,5 \cdot 0,08 = 17,64 \text{ g}$$

$$n(\text{CuS}) = \frac{4,8}{96} = 0,05 \text{ моль}$$

$$n(O_2) = 0,05 \cdot \frac{3}{2} = 0,075 \text{ моль}$$

$$n(\text{BaO}) = n(\text{H}_2\text{SO}_4) = \frac{17,642}{98} = 0,18 \text{ моль}$$

$$n(\text{BaO})_{\text{погр.}} = 0,18 + 0,045 \cdot 2 = 0,19$$



$$\text{ст. + разном.} = \frac{0,15}{0,18} = 0,83 (83\%)$$

Отбег: 83%

(10.2) $m = 12,252$

$$w(C) = 28,98\%$$

$$\omega(k) = 31,84\%$$

$$\omega(0) = 39,18\%$$

$\omega(O) = 39,18\%$
 Поскольку $\omega(O) > 30\%$, то попробуем посчитать ω -тов для $KClO_3$

Соед. может быть KClO
 KClO_2

 KClO
$$\text{KClO}_2$$
$$\text{KClO}_3$$
 KCO_4

используют и до(и-тов) для KClO₃

2. ~~best~~ für die ba
geg. Maße
→



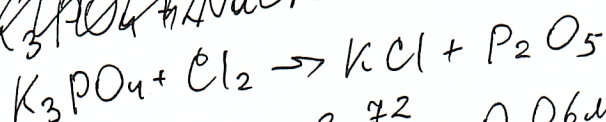
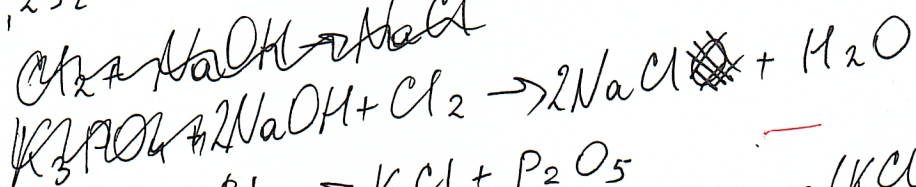
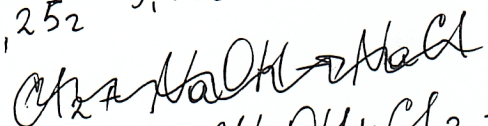
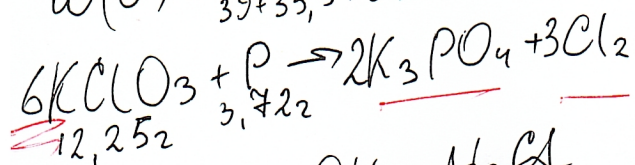
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$$\omega(K) = \frac{39}{39+35,5+3 \cdot 16} = 31,84\% - \text{верно}$$

$$\omega(Cl) = \frac{35,5}{39+35,5+3 \cdot 16} = 28,98\% - \text{верно}$$

$$\omega(O) = \frac{16 \cdot 3}{39+35,5+3 \cdot 16} = 39,18\% - \text{верно}$$

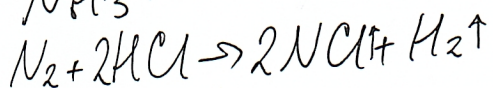
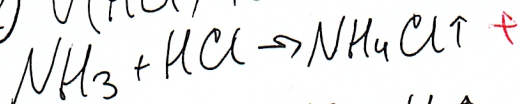


$$m(K_3PO_4) = \frac{3,72}{31,2} = 0,06 \text{ моль} = n(KCl)$$

$$m(KCl) = 74,5 \cdot 0,06 = 4,472$$

Ответ: 4,472

3.2 $V(HCl) = 10 \text{ л}$ $V(\text{смеси}) = 20 \text{ л}$



$$\rho = 1,334 \text{ г/л}$$

$$m(\text{кон. смеси}) = 30 \text{ л} \cdot 1,334 = 40,022$$

$$x - n(NH_4Cl) = n(NH_3)$$

$$y - n(N_2)$$

$$\begin{cases} 53,5x + 99y + 2y = 40,02 \\ x + y = 0,89 \end{cases}$$

$$x = 0,89 - y$$

$$53,5(0,89 - y) + 101y = 40,02$$

$$-47,775 + 53,5y + 101y + 40,02 = 0$$

$$-7,755 + 154,5y = 0$$

$$y = 0,0502$$

$$x =$$



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