

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

$\Sigma 735$

*Handwritten signature*

$M(C_{12}H_4Cl_4O_2) = 144 + 4 + 32 + 142 = 322 \text{ г/моль}$   
 $M(C_6H_2Cl_3ONa) = 72 + 2 + 106,5 + 16 + 23 = 219,5 \text{ г/моль}$

$m(C_{12}H_4Cl_4O_2) = \frac{100 \cdot 70}{100} = 70 \text{ г}$

$m(C_6H_2Cl_3ONa) = \frac{106,5 \cdot 28}{106} = 28 \text{ г}$

$M_A(Cl) = 142 \text{ г/моль} ?$

$M_B(Cl) = 106,5 \text{ г/моль}$

$\omega_A(Cl) = \frac{142 \cdot 100}{322} = 44,09\%$

$\omega_B(Cl) = \frac{106,5 \cdot 100}{219,5} = 48,51\%$

$m_A(Cl) = \frac{70 \cdot 44,09}{100} = 31 \text{ г}$

$m_B(Cl) = \frac{28 \cdot 48,51}{100} = 13,6 \text{ г}$

$m_{\Sigma}(Cl) = 31 + 13,6 = 44,6 \text{ г}$

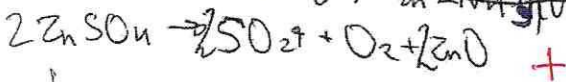
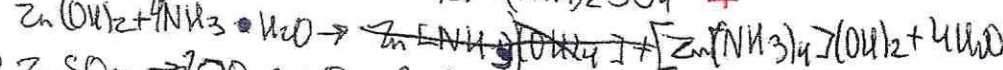
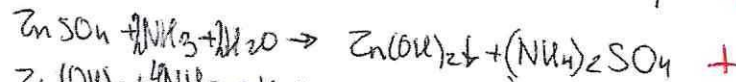
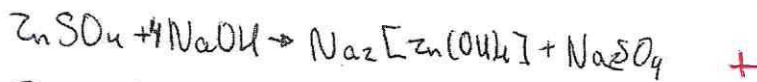
$\omega(Cl) = \frac{100 \cdot 44,6}{100} = 44,6\%$

$\omega_{\text{вещ}} = 44,6\%$

25

85

N2



N3



$m(K_2CO_3) = M_n \cdot x \text{ г}$

$100x + 100y = 250 \text{ г}$



$m(CaCO_3) = M_n = 100 \text{ г}$

$100x + 100x = 250$

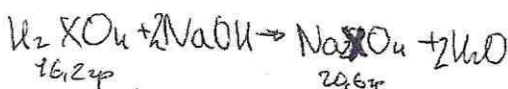
$x = 0,83 \text{ моль}$

$m_{\Sigma} = 167,46 + 111$

$m(K_2CO_3) = 138 \cdot 0,83 = 114,54 \text{ г}$

25

N4



$M(H_2XO_4) = 68 + X \text{ г/моль}$

$M(Na_2XO_4) = 87 + X \text{ г/моль}$

$m(H_2XO_4) = (68 + X)y = 162 \text{ г}$

$y = \frac{162}{68 + X}$

$m(Na_2XO_4) = (87 + X)y = 101,6 \text{ г}$

$\frac{162}{x + 68} = \frac{101,6}{110 + x} \Rightarrow x = 96$

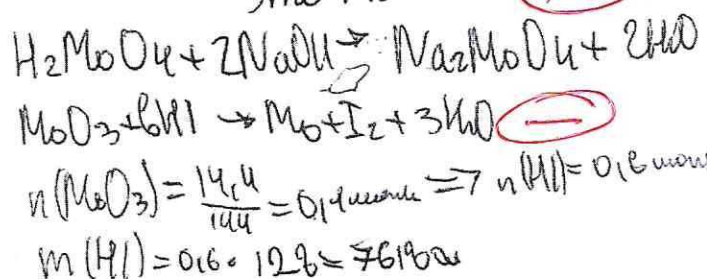
это Mo

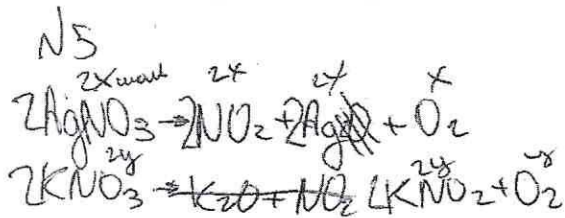
7,50



СЕЧЕНОВСКИЙ  
УНИВЕРСИТЕТ

9 X O 7 3





$M_{\text{cp}} = 40$  г/моль

$M_{\text{см}} = \frac{M}{V}$

$m(\text{см}) = m(\text{NO}_2) + m(\text{O}_2) = 46 \cdot 2x$

$32(x+y) = 124x + 32y$

$\frac{92x + 32x + 32y}{2x + x + y} = 40$

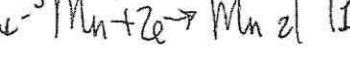
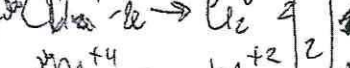
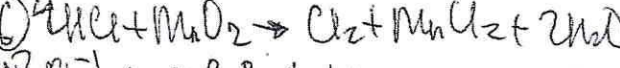
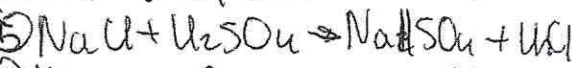
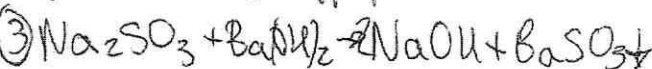
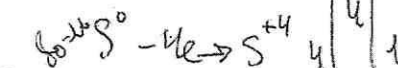
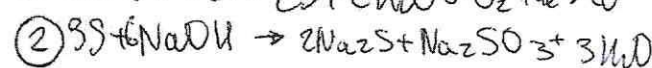
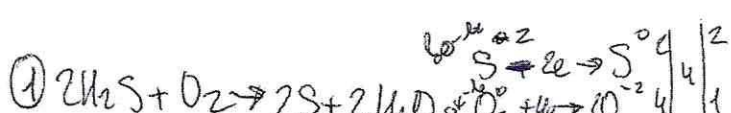
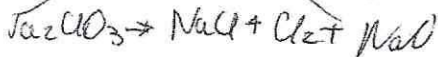
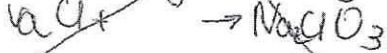
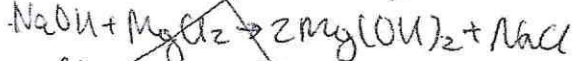
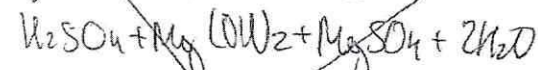
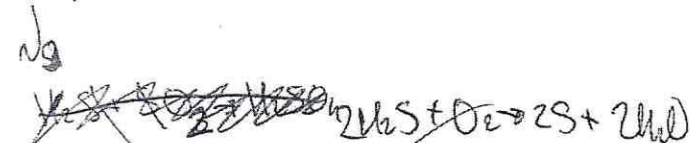
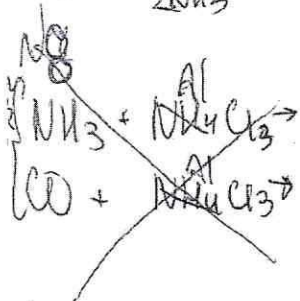
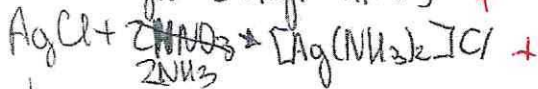
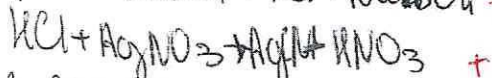
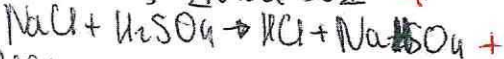
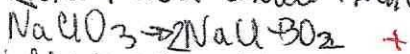
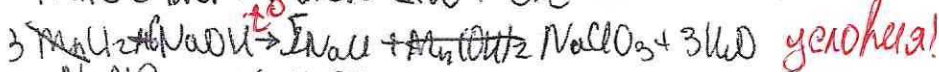
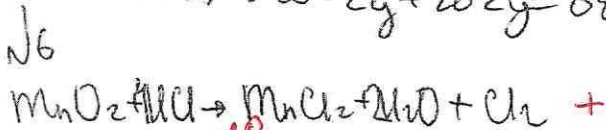
$2y = x$

$w(\text{KNO}_3) = \frac{202y}{882y} \cdot 100 = 22,9\%$

$w(\text{AgNO}_3) = 100 - 22,9 = 77,1\%$

100

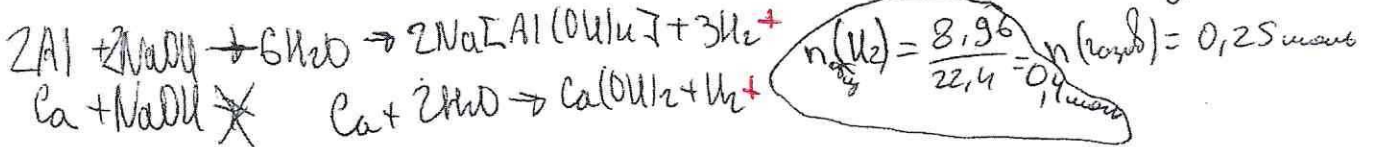
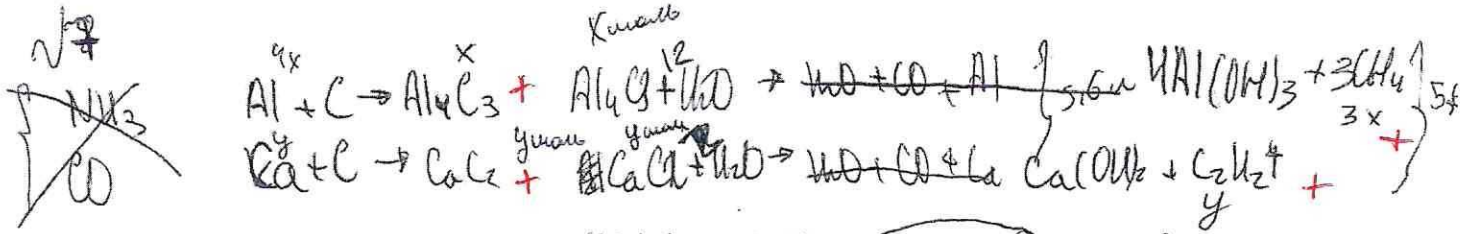
100



125







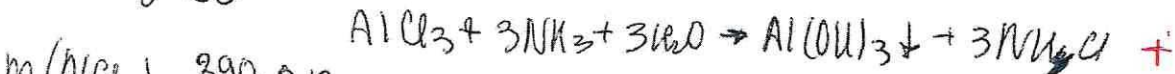
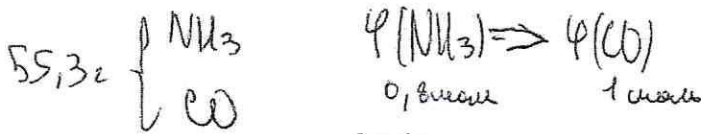
$y + 3x = 0,25$   
 $y + 6x = 0,4$   
 $3x = 0,15$   
 $x = 0,05 \text{ моль}$

$y = 0,25 - 3 \cdot 0,05 = 0,1 \text{ моль}$   
 $m(Al) = 4 \cdot 0,05 = 27 = 54 \text{ г}$   
 $m(Ca) = 40 \cdot 0,1 = 40 \text{ г}$   
 $5,4u + 4u = 9,4u$

55

$m(\text{смеси}) = 9,4 \cdot 2 = 18,8 \text{ г}$

№ 8



$m(AlCl_3) = 890 \cdot 0,12 = 106,8 \text{ г}$

$n(AlCl_3) = \frac{106,8}{133,5} = 0,8 \text{ моль} +$

$n(NH_3) = x \text{ моль} \quad n(CO) = y \text{ моль}$   
 $17x + 28y = 55,3$   
 $17 \cdot 3y + 28y = 55,3$   
 $56y + 28y = 55,3$   
 $79y = 55,3$   
 $y = 0,7$

$n(AlCl_3)_{пр} = 0,4 \text{ моль}$

$n(AlCl_3)_{ост} = 0,4 \text{ моль}$

$n(NH_4Cl) = 2,4 \text{ моль}$

$n(Al(OH)_3) = 0,4 \text{ моль}$

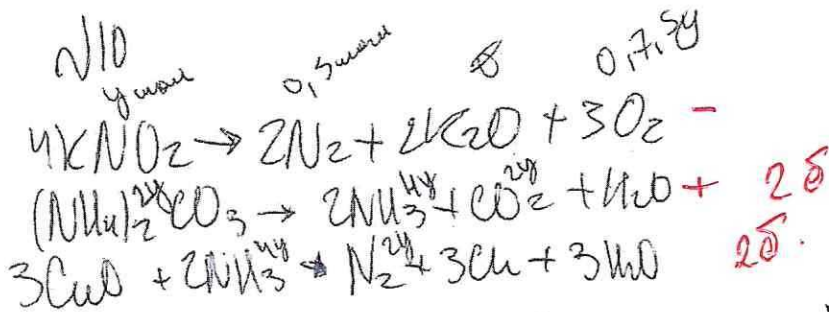
$m(пр-ра) = 55,3 + 890 - 54,6 - 19,6 = 871,1 \text{ г}$

$w(AlCl_3)_{ост} = \frac{13,35}{871,1} \cdot 100 = 1,5\%$

~~$w(NH_4Cl) = \frac{112,35}{871,1}$~~

$w(NH_4Cl) = \frac{112,35}{871,1} = 12,9\%$

105



x моль  $(\text{NМn})_2\text{CO}_3$   
y моль  $\text{KNO}_2$

$n(\text{O})_1 = 3x$  моль  
 $n(\text{O})_2 = 2y$  моль  
 $n(\text{K}) = y$  моль

$$\begin{aligned}
 n(\text{O})_{\text{вс}} &= 3x + 2y & 3x &= 6y \\
 3x + 2y &= 6y & x &= 2y
 \end{aligned}$$

$$n(\text{моль}) = 0,15y + 0,175y + 4y + 2y = 7,25y \text{ моль}$$

$$V(\text{моль}) = 7,25y \cdot 22,4 = 162,4y \text{ л}$$

$$n(\text{моль})_{\text{вод}} = 0,15y + 2y + 0,175y + 2y = 5,225y \text{ моль}$$

$$V(\text{моль})_{\text{вод}} = 5,225y \cdot 22,4 = 117,04y \text{ л}$$

$$\frac{162,4y}{117,04y} = 1,4 \text{ раза}$$

Ответ: уменьшилась в 1,4 раза

40

