

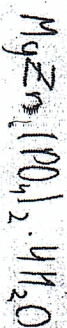
1.1

$$M_{r(1)} = 2 \cdot 1 + 6 \cdot 5 \cdot 2 + (3 \cdot 1 + 16 \cdot 4) \cdot 2 = 344 \text{ г/моль} - \text{log } H_2O$$

$$W_{(Zn)} = \frac{M_{(Zn)} \cdot Ar_{(Zn)} \cdot 100}{M_{r(1)} + n_{(H_2O)} \cdot M_{r(H_2O)}}$$

$$n_{(H_2O)} = \left(\frac{n_{(Zn)} \cdot Ar_{(Zn)} \cdot 100}{W_{(Zn)}} - M_{r(1)} \right) : M_{r(H_2O)}$$

$$n_{(H_2O)} = \left(\frac{2 \cdot 65 \cdot 100}{37,25} - 344 \right) : 18 = 4$$



2.1

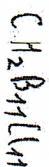
Пусма справуємо - $H_{x+1}C_{B+1}Cl_y$

$$W = \frac{n \cdot Ar \cdot 100}{M_r}$$

$$M_r = \frac{n \cdot Ar \cdot 100}{W} = \frac{11 \cdot 11 \cdot 100}{23,025} = 525,512 \text{ г/моль}$$

$$n = \frac{W \cdot M_r}{100 \cdot Ar} \quad n_{(Cl)} = \frac{525,5 \cdot 35,5}{100 \cdot 35,5} = 11$$

$$n_{(H)} = 525,5 - 11 \cdot 11 - 35,5 \cdot 11 - 12 \cdot 1 = 2$$



1.1

$$M_r = 2 \cdot 3 + 16 \cdot 5 + 14 \cdot 2 + 3 \cdot 12 \cdot 4 + 10 + 12 \cdot 12 = 666 \text{ г/моль}$$

$$W_{(C)} = \frac{M_{(C)} \cdot 100}{M_r} \quad m_{(C)} = \frac{W_{(C)} \cdot m_{(p-p)}}{100}$$

$$\text{Група } p-p-p = 1 \text{ г/моль} \quad m_{(p-p-p)} = V \cdot \rho = 50 \cdot 1 = 50 \text{ г}$$

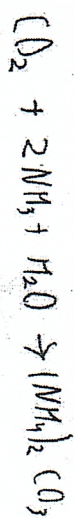
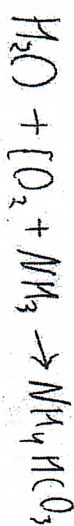
$$m_{(C)} = \frac{50 \cdot 21}{100} = 10,5 \text{ г}$$

$$W_{(E)} = \frac{m_{(E)} \cdot Ar_{(E)} \cdot 100}{M_r} = \frac{3 \cdot 12 \cdot 4 \cdot 100}{666} \approx 54,2 \%$$

$$W_{(E)} = \frac{m_{(E)} \cdot 100}{m_{(C)}} \quad m_{(E)} = \frac{m_{(C)} \cdot W_{(E)}}{100} = \frac{10,5 \cdot 54,2}{100} = 5,7$$

$$m_{(E)} = 6(2)$$

1.1



$$\eta(n_{(NH_4)(CO_3)} = n_{(H_4)(CO_3)} = x \text{ моль}$$

$$84,5 = 49x + 96x$$

$$x = 0,5 \text{ моль}$$

10x094

$$\frac{n(\text{NH}_3) \cdot n(\text{O}_2)}{n(\text{O}_2)} = \frac{1}{1} \Rightarrow n(\text{O}_2) = 0,5 \text{ моль}$$

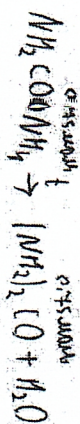
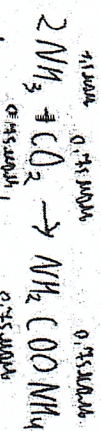
$$\frac{n(\text{NH}_3) \cdot n(\text{O}_2)}{n(\text{NH}_3)} = \frac{1}{1} \Rightarrow n(\text{NH}_3) = 0,5 \text{ моль}$$

$$\frac{n(\text{NH}_3) \cdot n(\text{O}_2)}{n(\text{O}_2)} = \frac{1}{1} \Rightarrow n(\text{O}_2) = 0,5 \text{ моль}$$

$$\frac{n(\text{NH}_3) \cdot n(\text{O}_2)}{n(\text{NH}_3)} = \frac{1}{1} \Rightarrow n(\text{NH}_3) = 1 \text{ моль}$$

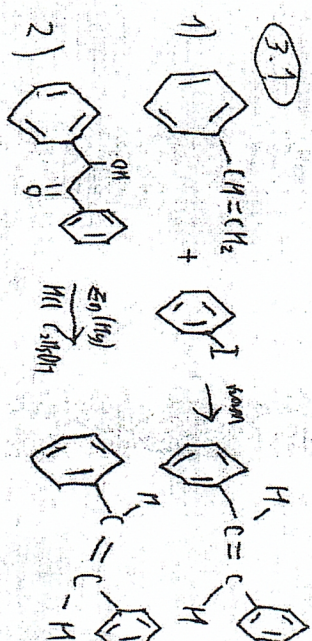
$$n(\text{O}_2) = 1 \text{ моль}$$

$$n(\text{NH}_3) = 1,5 \text{ моль}$$



$$m = 0,75 \cdot 60 = 45 \text{ г}$$

Ответ: 45 г



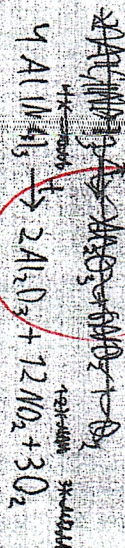
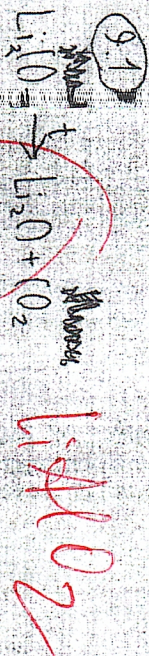
$$n(\text{benzal}) = \frac{31,9}{212} = 0,15 \text{ моль}$$

Угнетение реакции в p-и = 100% $\Rightarrow$ выход p-и = 51,54 %

$$\Rightarrow n(\text{p-и}) = \frac{0,15 \cdot 51,54}{100} = 0,0773 \text{ моль}$$

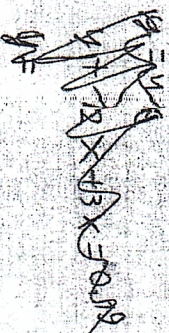
$$\frac{n(\text{p-и})}{n(\text{benzal})} = \frac{1}{1} \Rightarrow n(\text{benzal}) = 0,0773 \text{ моль}$$

$$m(\text{benzal}) = 0,0773 \cdot 104 \approx 8,04 \text{ г}$$



$V_A = \frac{m}{\rho} = \frac{8,379 \cdot 258}{100,11} = 21,15 \text{ л}$

$n(\text{Ca}) = \frac{V}{V_A} = \frac{V}{21,15} \approx 0,19 \text{ моль}$



$n(\text{Ca(OH)}_2) = n(\text{Ca}) = x$

$\frac{n(\text{Li}_2\text{O})}{n(\text{O}_2)} = \frac{1}{1}$

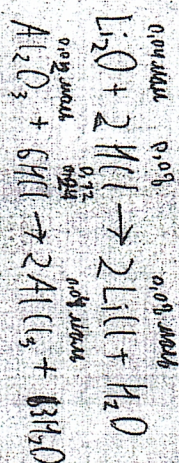
$n(\text{Al(NO}_3)_3) : n(\text{O}_2) = 4 : 12 : 3$

$n(\text{Li}_2\text{O}) + 3n(\text{Al(NO}_3)_3) + 0,19 \cdot n(\text{Al(NO}_3)_3) = 0,19$

$x + 3x + 0,15x = 0,19$

$x = 0,04 \text{ моль}$

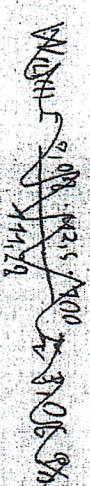
☐ ☐ ☐ ☐ ☐ ☐



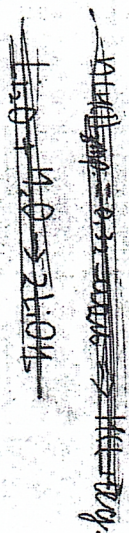
$m(\text{Li}_2\text{O}) = 0,04 \cdot (12 + 2 \cdot 16) = 12,2$

$m(\text{Al}_2\text{O}_3) = 0,04 \cdot (2 \cdot 27 + 3 \cdot 16) = 11,06 \text{ г}$

$m(\text{H}_2\text{O}) = 100 \cdot 1,06 + 4 \cdot 18 + 11,2 = 111,28 \text{ г}$



$n(\text{HCl}) = \frac{100 \cdot 1,06}{36,5} = 0,29 \text{ моль} - \text{избыток}$



$M = \frac{n \cdot M_r \cdot 100}{m_{\text{пр}}} = \frac{m \cdot 100}{m_{\text{пр}}}$

$W(\text{LiCl}) = \frac{m(\text{LiCl})}{m(\text{LiCl}) + m(\text{H}_2\text{O})} = \frac{12 + 3,5}{103,24} \approx 3,11\%$

$W(\text{AlCl}_3) = \frac{0,04 \cdot (27 + 3 \cdot 35) \cdot 100}{103,24} \approx 11,89\%$

☐ ☐ ☐ ☐ ☐ ☐

10X094

