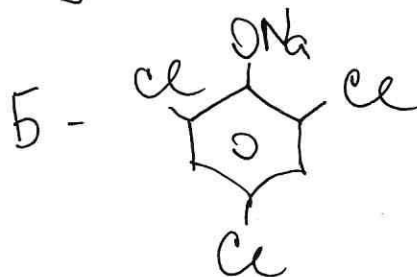
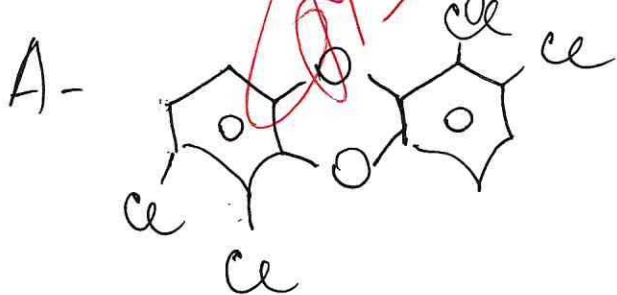


1 2 3 4 5 6 7 8 9 10
~~6 10 8 8 6 10 2 2 2~~

Задача 1.3



$$n(\text{C}) = \frac{6,622 \cdot 10^{23}}{6,02 \cdot 10^{23}} = 1,1 \text{ моль} \quad n(\text{O}) = \frac{3,01 \cdot 10^{23}}{6,02 \cdot 10^{23}} = 0,5 \text{ моль}$$

Пусть $n(A) = x$ моль, $n(B) = y$ моль, тогда $n(\text{C}) = 4x + 3y$

$$\begin{cases} 4x + 3y = 1,1 \\ 2x + y = 0,5 \end{cases} \Rightarrow \begin{cases} y = 0,5 - 2x \\ 4x + 3(0,5 - 2x) = 1,1 \end{cases} \Rightarrow \begin{cases} x = 0,2 \\ y = 0,1 \end{cases}$$

$$m(\text{образца}) = 64,4 + 21,95 = 86,35 \text{ г}$$

$$\begin{aligned} 4x + 1,5 - 6x &= 1,1 \\ -2x &= -0,4 \\ x &= 0,2 \end{aligned}$$

$$m(A) = 0,2 \cdot 322 = 64,4 \text{ г}$$

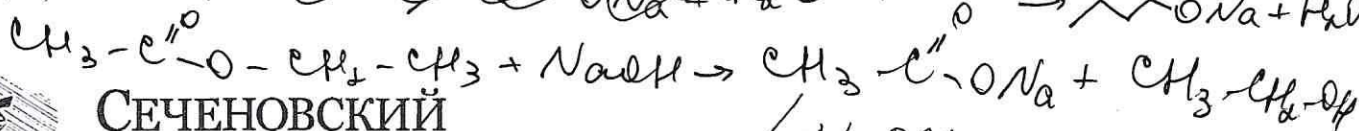
$$m(B) = 0,1 \cdot 219,5 = 21,95 \text{ г}$$

Задача 2.3

$$n(\text{C}) = n(\text{CO}_2) = \frac{17,92}{22,4} = 0,8 \text{ моль} \quad n(\text{H}) = 2n(\text{H}_2\text{O}) = \frac{2 \cdot 18}{18} = 2 \text{ моль}$$

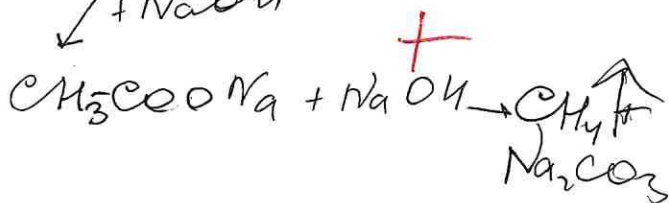
$$m(\text{O}) = 14,8 - 0,8 \cdot 12 - 2 \cdot 1 = 3,2 \text{ г} \quad n(\text{O}) = \frac{3,2}{16} = 0,2 \text{ моль}$$

$$\text{C} : \text{H} : \text{O} = n(\text{C}) : n(\text{H}) : n(\text{O}) = 0,8 : 2 : 0,2 = 4 : 10 : 1$$



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$n(\text{NaOH}) = 0,2 \cdot 4 = 0,8 \text{ моль}$ (в реакцию)

$m(\text{NaOH}) = 0,8 \cdot 40 = 32 \text{ г}$

$n(\text{CH}_3\text{COOC}_2\text{H}_5) = x$ $n(\text{Na}_2\text{CO}_3) = x$

$n(\text{NaOH}) = 0,8 - 2x$

$\Sigma n(\text{Na}) = 0,8$ $m(\text{Na}) = 18,4$

$m(\text{CH}_3\text{COOC}_2\text{H}_5) = 88 \cdot 0,3 = 26,4$

$m(\text{C}_2\text{H}_5\text{-O-C}_2\text{H}_5) = 18,6$ $\omega = 41,3\%$

+

100

Задача 3.3

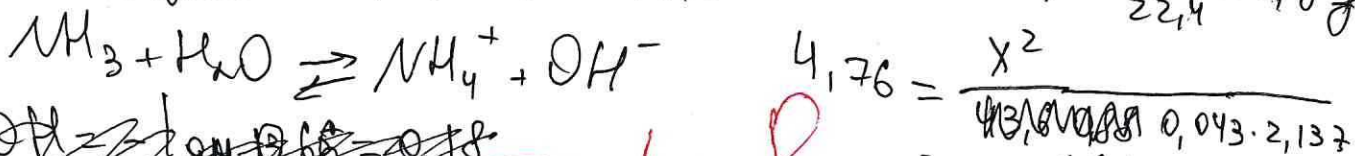
$V_{\text{уст.}} = 2\pi r^2 h = 2 \cdot 3,14 \cdot 2,5^2 \cdot 25 = 981,25 \text{ см}^3 = 0,981 \text{ л}$

$= 0,981 \text{ л}$

$[\text{NH}_3] = \frac{0,88}{20,405} = 0,043 \text{ М}$ $[\text{H}_2\text{O}] = \frac{43,6}{20,405} = 2,137$

$V(\text{H}_2\text{O}) = 0,981 \cdot 0,8 = 0,785 \text{ л}$ $n(\text{H}_2\text{O}) = \frac{0,785}{18} = 43,6 \text{ моль}$

$V(\text{NH}_3)_{\text{всего}} = 0,785 \cdot 25 = 19,62 \text{ л}$ $n(\text{NH}_3) = \frac{19,62}{22,4} = 0,875 \text{ моль}$



~~$\text{pOH} = 14 - 0,68 = 0,18$~~

$\text{pH} = 14 - 0,58 = 13,8$

+

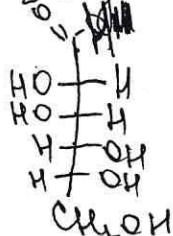
8

$x^2 = 0,44$

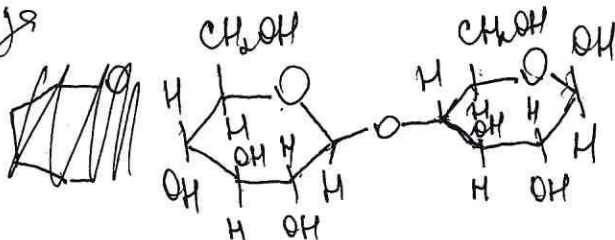
$x = 0,66 \text{ М}$

Задача 4.3

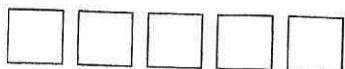
D-манноза

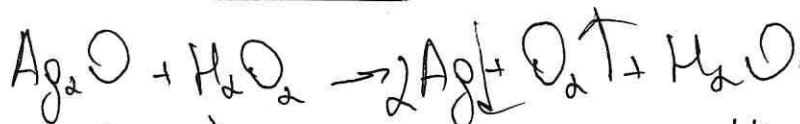


лактоза



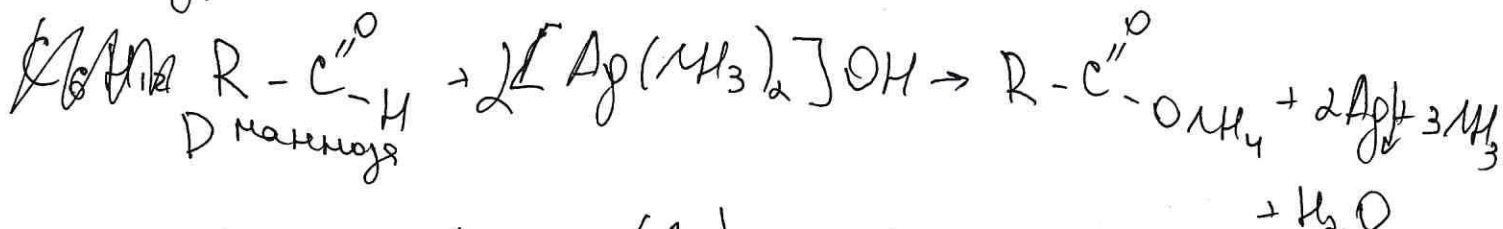
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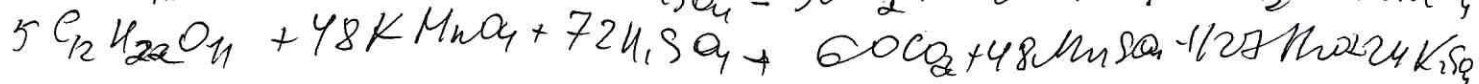
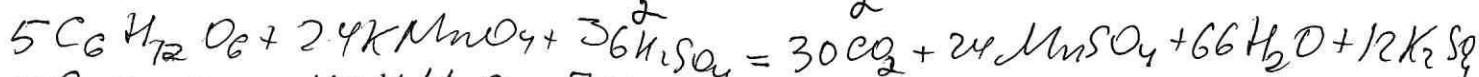


$$m(H_2O_2) = 17 \cdot 0,3 = 5,1 \text{ г} \quad n(H_2O_2) = \frac{5,1}{34} = 0,15 \text{ моль}$$

$$n(Ag) = 0,15 \cdot 2 = 0,3 \text{ моль}$$



$$n(\text{манноза}) = \frac{n(Ag)}{2} = \frac{0,3}{2} = 0,15 \text{ моль}$$



$$n(C_6H_{12}O_6) = x$$

$$n(H_2O_2) \quad 2x + 2y = 0,3$$

$$n(C_{12}H_{22}O_{11}) = y$$

$$6x + 12y = 1,2$$

$$n(CO_2) = \frac{pV}{RT} = 1,2$$

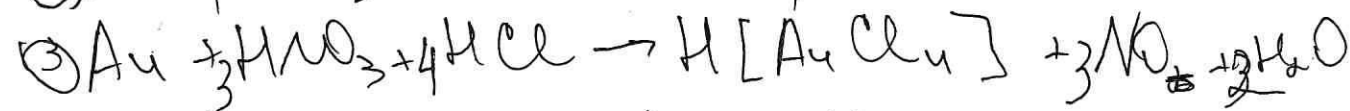
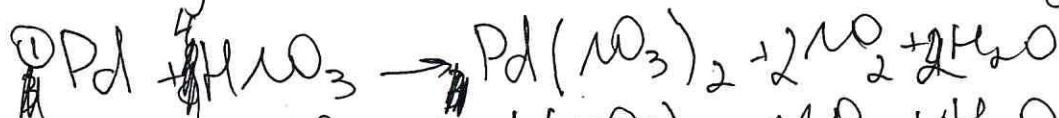
$$x = 0,1 \quad y = 0,05$$

$$m(C_6H_{12}O_6) = 18,2 \text{ г} \quad 10,9 \text{ г} (CO_2)$$

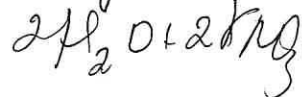
Задача 5.3

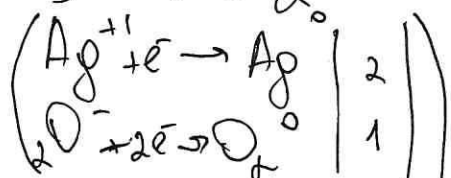
$$V_{\text{вытесни}} = 4 \cdot \frac{1}{3} \cdot 3,4 = 4,5 \text{ см}^3 = 4,53 \cdot 10^{-6} \text{ м}^3$$

$$m = \rho V = 12781,5 \cdot 4,53 \cdot 10^{-6} = 0,0579 \text{ кг} = 57,9 \text{ г}$$



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$$n(\text{AgNO}_3) = \frac{272}{170} = 1,6 \text{ моль} \Rightarrow n(\text{O}_2) = \frac{1,6}{2} = 0,8 \text{ моль}$$

$$n(\text{NO}_2)_{1+2} = n(\text{O}_2)_4 = 0,8 \text{ моль}$$

$$n(\text{NO}_2)_3 = \frac{0,8}{8,34} = 0,096 \text{ моль} \quad n(\text{Au}) = \frac{0,096}{3} = 0,032 \text{ моль}$$

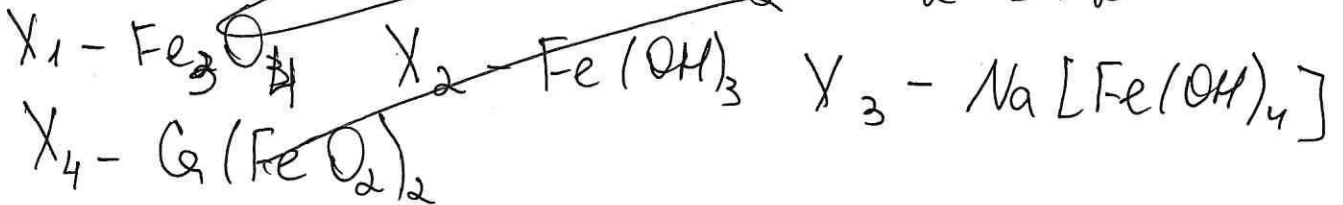
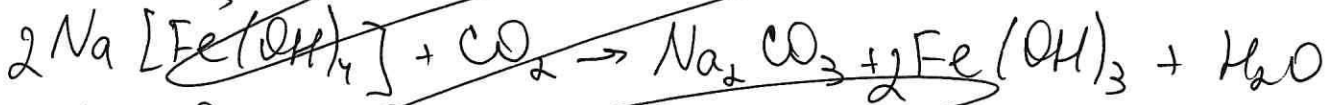
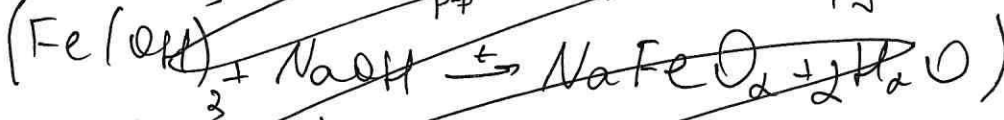
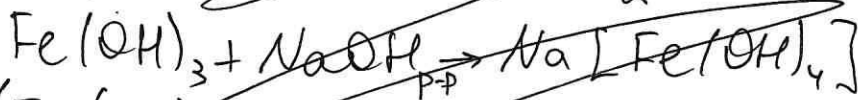
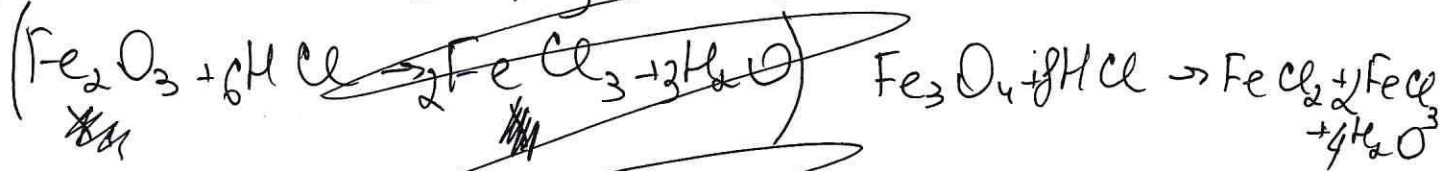
$$m(\text{Au}) = 0,032 \cdot 197 = 6,3 \text{ г}$$

$$\omega(\text{Au}) = \frac{6,3}{57,9} \cdot 100\% = 10,88\%$$

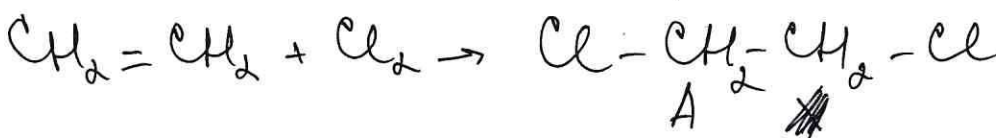
+ 65.



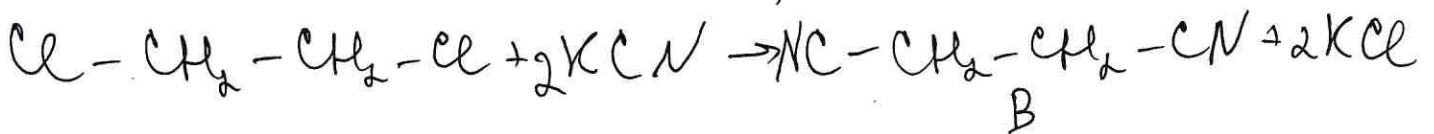
Задание 7.3

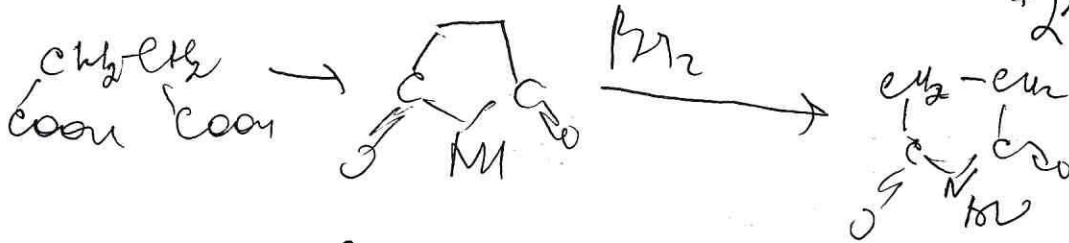
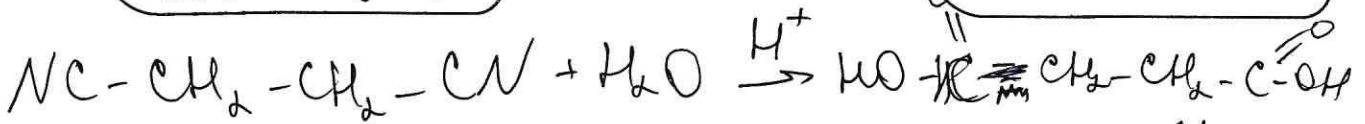


Задание 8.3



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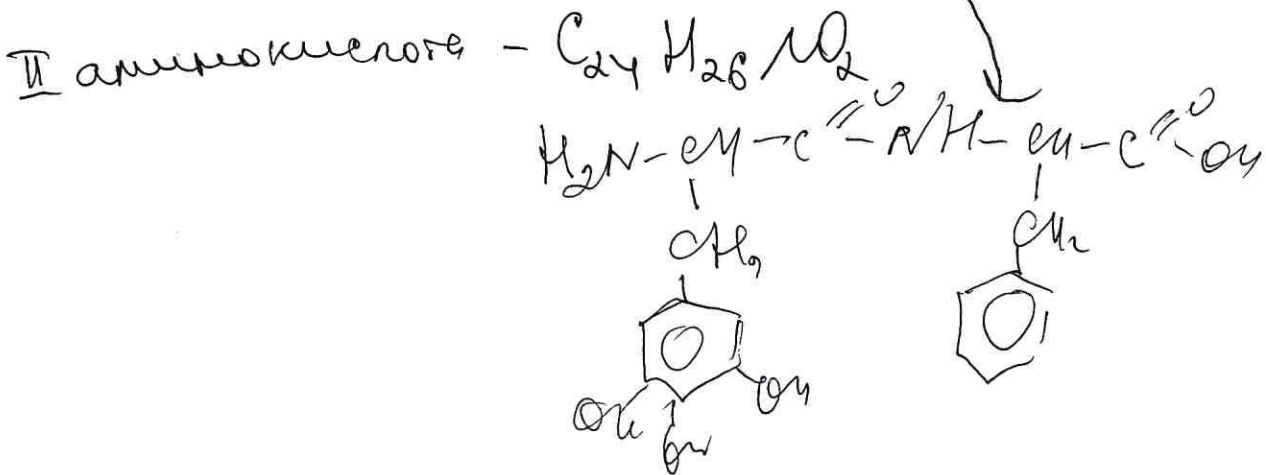
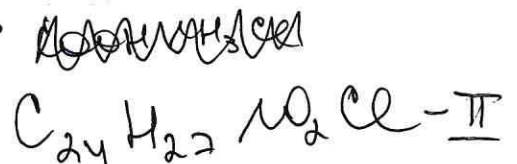
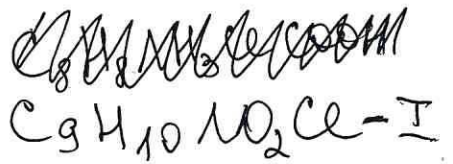




Задание 6.3

$$M_1 = \frac{35,5x}{0,176179} = 201,5x \quad 2/\text{моль}$$

$$M_2 = \frac{35,5y}{0,089533} = 396,5y \quad 2/\text{моль}$$



108.

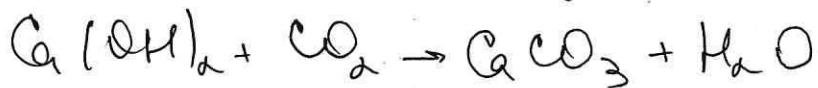


Задание 9.3

Цистин $C_3H_7NO_2S$

Фероксимитридин $C_9H_{13}N_3O_4$

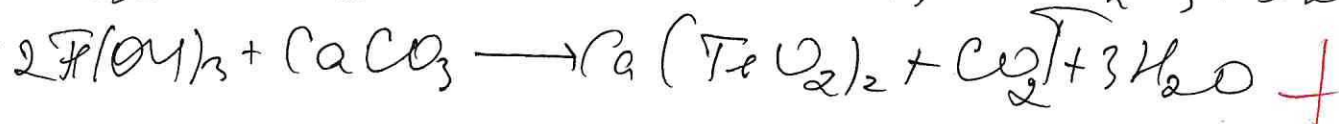
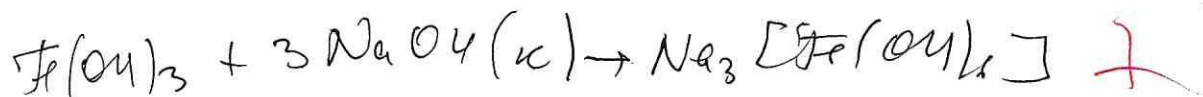
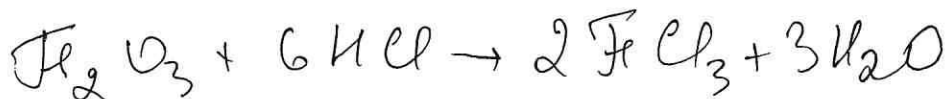
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f 2



7.3.



12

