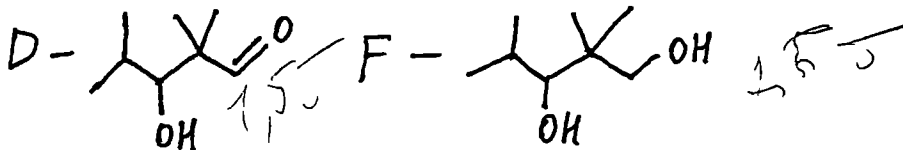
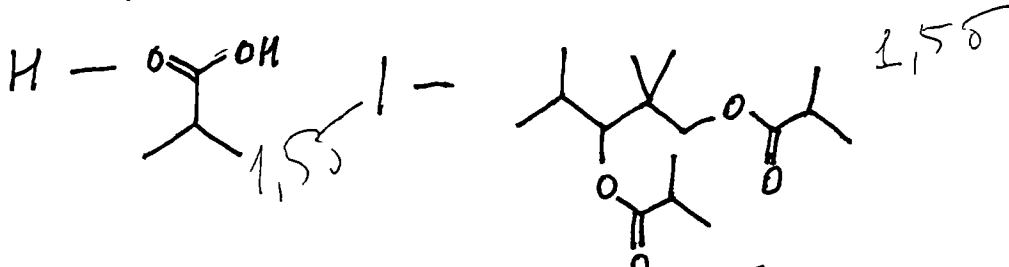


F $n(C) \ n(H) \ n(O) = \frac{65,45}{12} \ \frac{12,33}{1} \ \frac{100-65,45-12,33}{16} = 5,48 \ 12,33$
 $1,37 = 4 \cdot 9 \ 1 = 8 \ 18 \ 2$



I $n(C) \ n(H) \ n(O) = \frac{64,1}{12} \ \frac{10,49}{1} \ \frac{100-64,1-10,49}{16} = 5,59 \ 10,49 \ 1,4 =$
 $= 4 \ 4,5 \ 1 = 16 \ 30 \ 4$



3) ~~на~~ серную кислоту H_2SO_4 15

Задание 1

$$K_a = \frac{[H^+][CH_3COO^-]}{[CH_3COOH]} = \frac{[H^+]^2}{[CH_3COOH]} = 1,44 \cdot 10^{-5} \quad [H^+] = \sqrt{[CH_3COOH] K_a}$$

~~$[CH_3COOH]_{\text{кон}}$~~

$m(CH_3COOH) = 500 \text{ г} \ \rho_{\text{р}} = 5 \text{ г/мл}$

$n(CH_3COOH) = 5 \text{ л} \ (12 \cdot 2 + 4 + 16 \cdot 2) = 0,0833 \text{ моль}$

$[CH_3COOH]_{\text{нач}} = \frac{0,0833}{0,5} = 0,167 \text{ моль/л} \ \checkmark$

$[H^+]_{\text{нач}} = \sqrt{[CH_3COOH]_{\text{нач}} K_a} = \sqrt{0,167 \cdot 1,44 \cdot 10^{-5}} = 1,4 \cdot 10^{-3} \text{ моль/л}$

$pH_{\text{нач}} = -\lg [H^+]_{\text{нач}} = 2,44 \ \checkmark$

$[CH_3COOH]_{\text{кон}} = \frac{0,0833}{0,5 + 0,6} = 0,0454 \text{ моль/л} \ \checkmark$

$[H^+]_{\text{кон}} = \sqrt{[CH_3COOH]_{\text{кон}} K_a} = \sqrt{0,0454 \cdot 1,44 \cdot 10^{-5}} = 1,15 \cdot 10^{-3} \text{ моль/л}$

$pH_{\text{кон}} = -\lg [H^+]_{\text{кон}} = -\lg(1,15 \cdot 10^{-3}) = 2,94 \ \checkmark$

~~$[CH_3COOH]_{\text{кон}}$~~

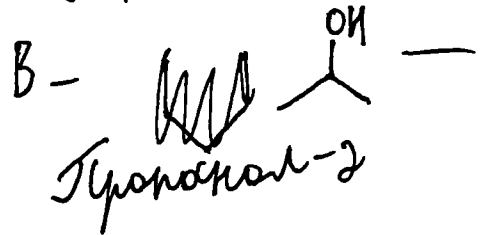
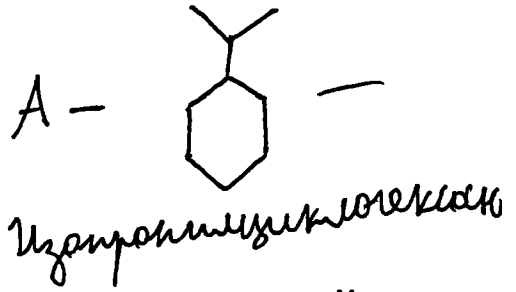
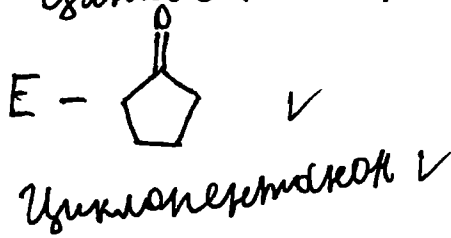
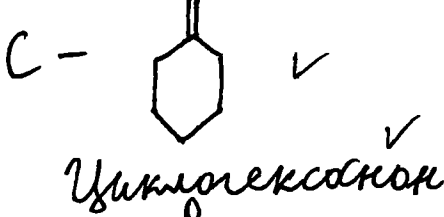
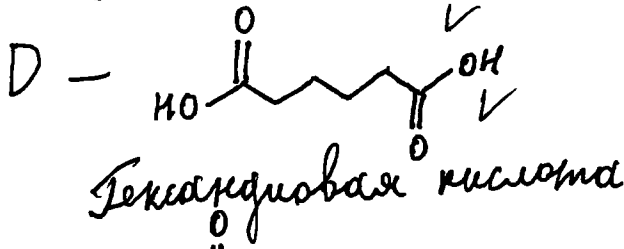
$\Delta pH = 2,94 - 2,44 = 0,14 \ \checkmark$

Ответ pH раствора увеличился на 0,14

5

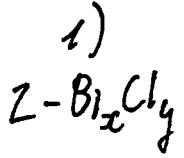
Задача 3

Бланк ответов



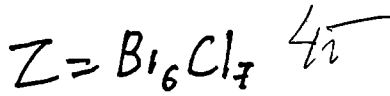
12

Задача 4 125



$$w(B) = \frac{M(B) \cdot x}{M(B_{1x}Cl_y)} \cdot 100 = \frac{M(B) \cdot x \cdot 100}{M(B) \cdot x + M(Cl) \cdot y} = 83,48\% = \frac{20900x}{209x + 35,5y}$$

x	y
1	1,165
2	2,33
3	3,5
6	7



$$Z_{эм} = \frac{M_{эм}}{M(B_{16}Cl_7)} = \frac{6008}{209 \cdot 6 + 35,5 \cdot 7} = \frac{1}{2} \Rightarrow \text{формула ячейки } B_{24}Cl_{28} \text{ 15}$$

2) $l = 2 - k$ $m = 2 - k$

3) $B_{12p+2q+r}Cl_{8q+5r}$

$$\begin{cases} 2p+2q+r=24 \\ 8q+5r=28 \end{cases} \rightarrow \begin{cases} 2p+2q+r=24 \\ r=5,6-1,6q \end{cases} \rightarrow \begin{cases} 2p+0,4q=18,4 \\ r=5,6-1,6q \end{cases} \rightarrow \begin{cases} 2p+0,4q=18,4 \\ r-1,6q=5,6 \end{cases} \rightarrow \begin{cases} 2p+0,4q=18,4 \\ r=5,6+1,6q \end{cases}$$

~~$\begin{cases} 2p+2q+r=24 \\ 5r=28-8q \end{cases} \rightarrow \begin{cases} 2p+2q+r=24 \\ r=5,6-1,6q \end{cases} \rightarrow \begin{cases} 2p+0,4q=18,4 \\ r=5,6-1,6q \end{cases} \rightarrow \begin{cases} 2p+0,4q=18,4 \\ r=5,6+1,6q \end{cases}$~~

B1

$$2(0,2 - 0,2q) + 2q + (5,6 + 1,6q) = 24$$

$$8q + 5(5,6 + 1,6q) = 28$$

$$\begin{cases} 2p + 0,4q = 18,4 \\ 1,6q = 5,6 \end{cases}$$

$$1,6q = 5,6$$

$$\begin{cases} 2p + 0,4(2r - 5,6) = 18,4 \\ 1,6q = 2r - 5,6 \end{cases}$$

$$1,6q = 2r - 5,6$$

$$\begin{cases} 2p + 0,25r = 12,8 \\ r - 1,6q = 5,6 \end{cases}$$

$$r - 1,6q = 5,6$$

$$\text{[Crossed out equations]}$$

