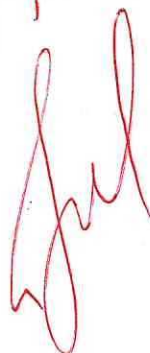
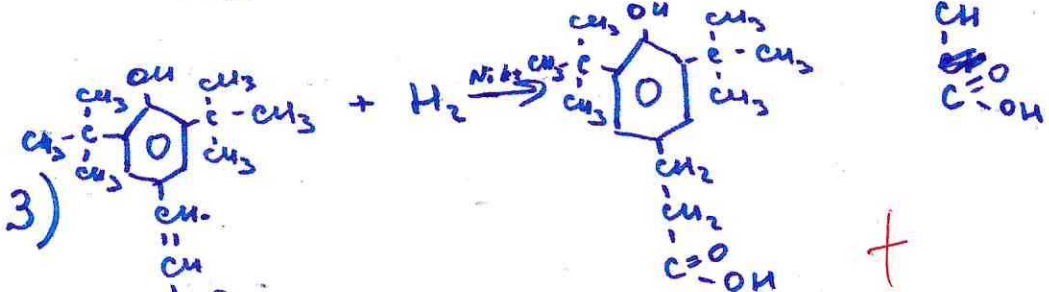
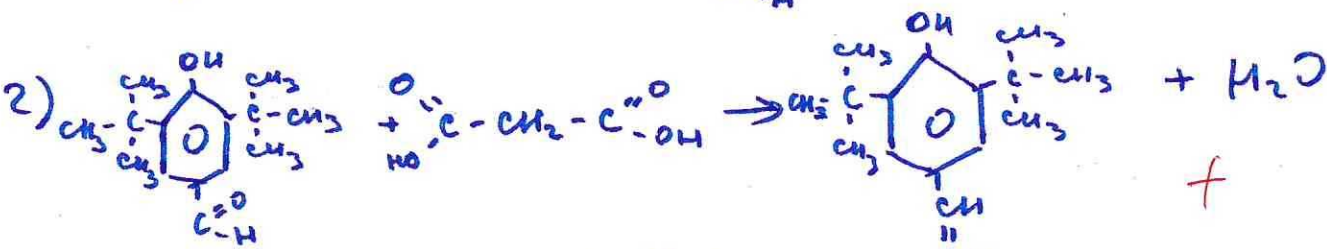
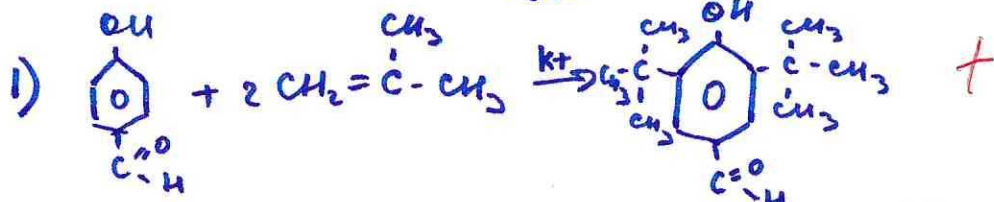
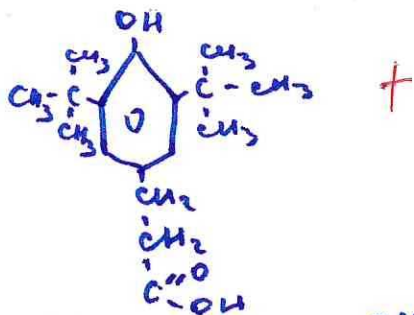


1	2	3	4	5	6	7	8	9	10
4	3	X	8	2	6	12	2	8.	16

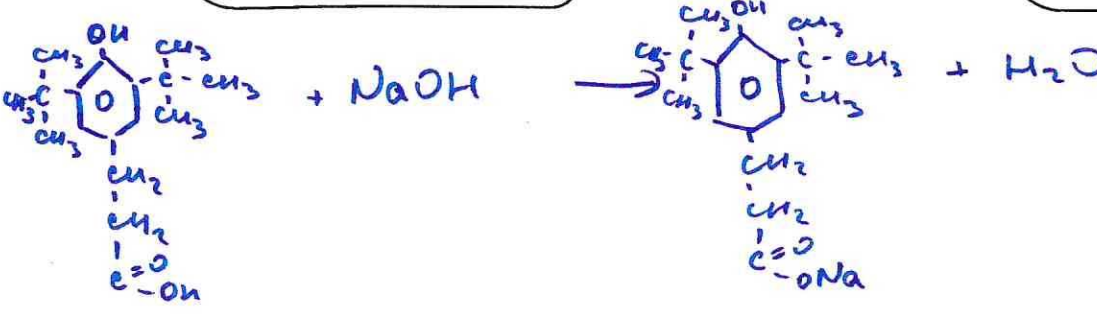
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Задание 10

Резорциновая кислота



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$$m(x) = \frac{M(x) \cdot c(\%) \cdot V(T) \cdot V_k}{V_{np.}}$$

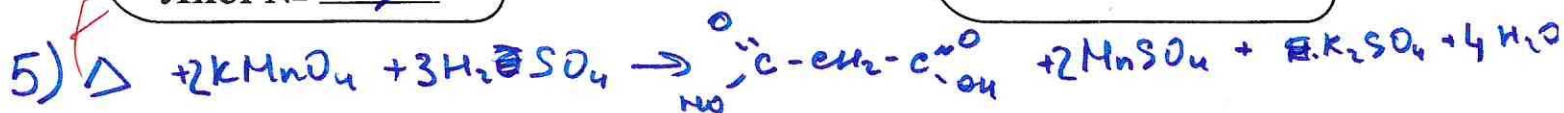
~~$$m(\text{ф.к.}) = \frac{234 \cdot 0,1 \cdot 0,001 \cdot 0,4}{0,005} = 1,872 \text{ г}$$~~

$$\omega(\text{ф.к.}) = \frac{1,872}{2,80} \cdot 100 = 66,9 \%$$

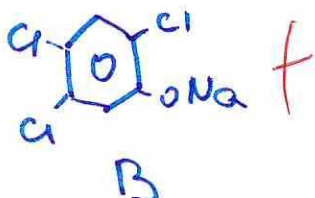
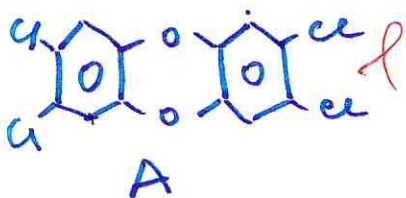
Ответ: 66,9 %

Задача 7.

- 1) $\Delta + HI \rightarrow CH_3-CH_2-CH_2I$
- 2) $CH_3-CH_2-CH_2I + Mg \xrightarrow{\text{эфир}} CH_3-CH_2-CH_2MgI$
- 3) $CH_3-CH_2-CH_2MgI + HC(=O)H \rightarrow CH_3-CH_2-CH_2-CH_2OMgI$
- 4) $CH_3-CH_2-CH_2-CH_2OMgI + H_2O \xrightarrow{H^+} CH_3-CH_2-CH_2-CH_2OH + Mg(OH)I$
- ~~5) $\Delta + 8KMnO_4 + 4H_2SO_4 \rightarrow 5CH_3-C(=O)-COOH + 5CO_2 + 8MnSO_4 + 4K_2SO_4 + 4H_2O$~~
- 5) $\Delta + 2KMnO_4 + 4H_2SO_4 \rightarrow HO-C(=O)-CH_2-C(=O)OH + 2MnSO_4 + K_2SO_4 + 4H_2O$
- 6) $HO-C(=O)-CH_2-C(=O)OH + 2CH_3-CH_2-CH_2-CH_2-OH \rightarrow HO-C(=O)-CH_2-C(=O)-O-CH_2-CH_2-CH_2-CH_3 + 2H_2O$



Задача 1



Пусть $\nu(A) = 10x$
 $\nu(B) = x$

$m_1 + m_2 = m_{\text{смеси}}$

$10x \cdot \frac{262}{100} + 225,5x = 100$

$2620x + 225,5x = 100$

$2845,5x = 100$

$x = 0,0351$

$\nu(A) = 0,0351 \cdot 10 = 0,351 \text{ моль}$

$\nu(B) = 0,0351 \text{ моль}$

$\nu_1(\text{Cl}) = 0,351 \cdot 4 = 1,404 \text{ моль}$

$\nu_2(\text{Cl}) = 0,0351 \cdot 3 = 0,1053 \text{ моль}$

$\Sigma(\text{Cl}) = 0,1053 + 1,404 = 1,5093 \text{ моль}$

$m(\text{Cl}) = 1,5093 \cdot 35,5 = 53,58 \text{ г}$

$\nu(\text{Na}) = 0,0351 \cdot 1 = 0,0351 \text{ моль}$

$m(\text{Na}) = 0,0351 \cdot 23 = 0,8 \text{ г}$

$\frac{m(\text{Cl})}{m(\text{Na})} = \frac{53,58}{0,8} = \frac{8,72}{0,8} = 10,9 \text{ р.}$

Ответ: 10,9



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10 8 0 9 1

Задача 2

10 мг - 1 мл +

X - 10 мл

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$X = \frac{10 \cdot 10}{1} = 100 \text{ мг}$ +

$V_{р-р} = \frac{100}{0,4} = 250 \text{ мл}$ +

$V_{\text{криз. р.}} = 250 - 10 = 240 \text{ мл}$

$\ln \frac{C_0}{C_t} = k \cdot t \quad k = \frac{\ln 2}{t_{1/2}} \cdot t = \frac{0,69}{0,94} \cdot 20 = 34,5$ +

~~$\ln \frac{100}{18,75} = 0,225 \cdot 34,5 = 7,76$~~ $\frac{34,5}{1,00} = 0,225$ +

$\ln = \frac{100}{18,75} \cdot 34,5 = 1,84$

Задача 4.



C	I	H	
3,05	96,4	0,25	
$\frac{3,05}{12} = 0,25$	$\frac{96,4}{124} = 0,76$	$\frac{0,25}{1} = 0,25$	
3,05	96,4	0,25	

1 : 3 : 1



$$n(\text{CHI}_3) = \frac{29,55}{394} = 0,075 \text{ моль}$$

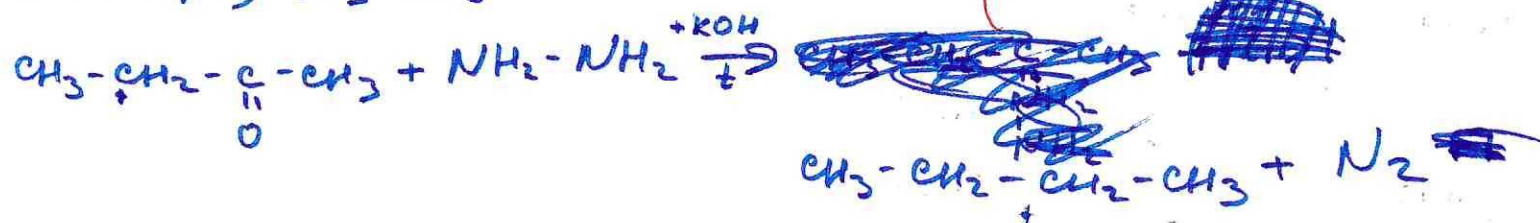
$$n(\text{CHI}_3) = n(\text{R-C(=O)ONa}) = 0,075 \text{ моль}$$

~~$$M(\text{R-C(=O)ONa}) = R + 12 + 32 + 23 = R + 67 = 96$$~~

$$M(\text{R-C(=O)ONa}) = \frac{7,2}{0,075} = 96$$

$$R + 67 = 96$$

$$R = 29 \Rightarrow \text{CH}_3\text{-CH}_2$$

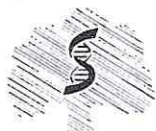


$$n(\text{C}_4\text{H}_{10}) = \frac{3,22}{58} = 0,05 \text{ моль (пр.)}$$

$$n_{\text{теор}}(\text{C}_4\text{H}_8\text{O}) = n(\text{CHI}_3) = 0,075 \text{ моль}$$

$$\eta = \frac{n_{\text{пр}}}{n_{\text{теор}}} = \frac{0,05}{0,075} \cdot 100 = 67\%$$

$$m(\text{I}_2) = 0,225 \cdot 254 = 57,15 \text{ г}$$



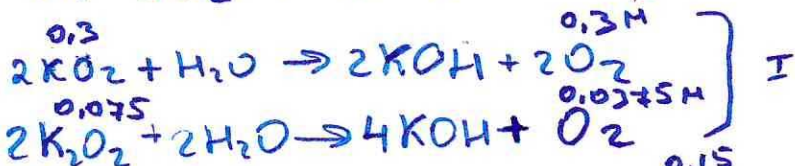
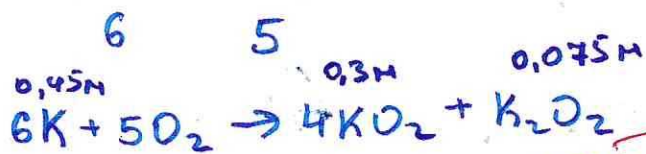
Задача 9



$$n(K) = \frac{17,55}{39} = 0,45 \text{ моль}$$

$$V_{\text{обш.}} = 0,45 \cdot \frac{8}{3} = 1,2 \text{ моль}$$

K	O
0,45	2,4
0,075	0,48



$$n_{\text{I обш.}}(O_2) = 0,3 + 0,0375 = 0,3375 \text{ моль}$$

$$n_{\text{II}}(O_2) = 0,15 \text{ моль}$$

$$\frac{V_{\text{I}}}{V_{\text{II}}}$$

$$V_{\text{I}} = 0,3375 \cdot 22,4 = 7,56 \text{ л}$$

$$V_{\text{II}} = 0,15 \cdot 22,4 = 3,36 \text{ л}$$

$$m_{\text{I}}(O_2) = 0,3375 \cdot 32 = 10,8 \text{ г}$$

$$m_{\text{II}}(O_2) = 0,15 \cdot 32 = 4,8 \text{ г}$$

$$V_{\text{I}} = 10,22 \cdot 22,4 = 229,12 \text{ л}$$

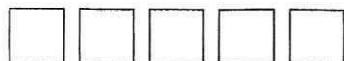
$$V_{\text{II}} = 4,8 \cdot 22,4 = 107,52 \text{ л}$$

$$\frac{229,12}{107,52} \approx 2,13$$

Ответ: 2,3



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Задача 8

Пусть $v(\text{NH}_3) = x$

$v(\text{F}_2) = y$

$$D_{(\text{Ne})}^{(x)} = \frac{x}{20} = 3,55$$

$x = 71 \Rightarrow \text{NF}_3$



Задача 6

Пусть $n[\text{x}(\text{CO})_4] = 1 \text{ моль}$

$A_r(x) = x$

$$\omega(\text{C}) = \frac{m(\text{C})}{M[\text{x}(\text{CO})_4]}$$

$$0,2812 = \frac{12}{x + 112}$$

$x = 58,7 \Rightarrow \text{Ni}$



$$9 + 3n = 24$$

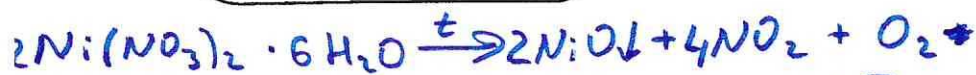
$$3n = 18$$

$$n = 6$$



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Задача 5



$$K_s = c(\text{Ca}^{2+}) \cdot c^2(\text{OH}^-)$$

Пусть $c(\text{Ca}^{2+}) = x$
 $c(\text{OH}^-) = (2x)^2$

$$K_s = 4x^3$$

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Задача 3



Пусть $n(\text{C}_x\text{H}_y\text{O}_z) = 1 \text{ моль}$

$$\frac{m(\text{H})}{m(\text{C}_x\text{H}_y\text{O}_z)} = 0,345$$

$$\frac{1}{12x + 1y + 16z} = 0,345$$

