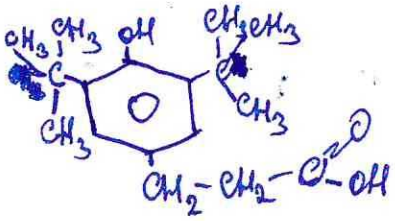
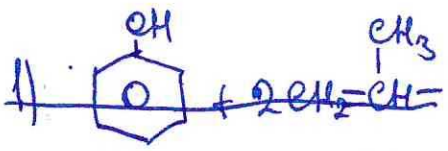
№10.2 №10.2

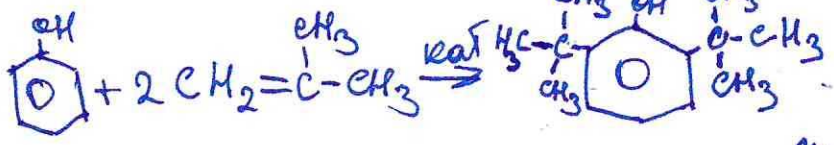
1	2	3	4	5	6	7	8	9	10
6	6	0	3	4	2	12	0	0	18

51 Un



2



1) 

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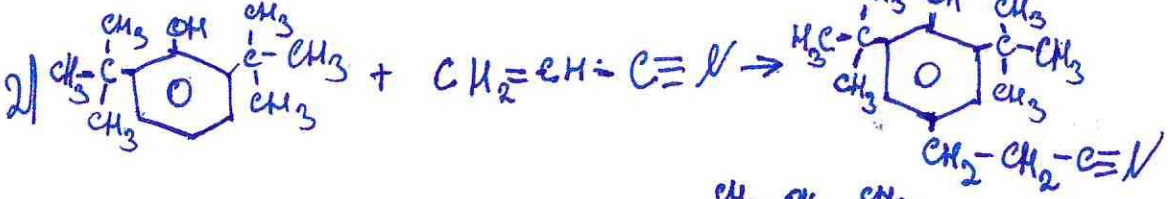
2) 

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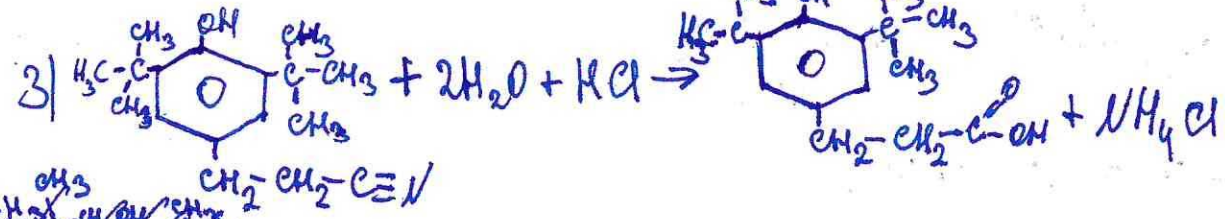
3) 

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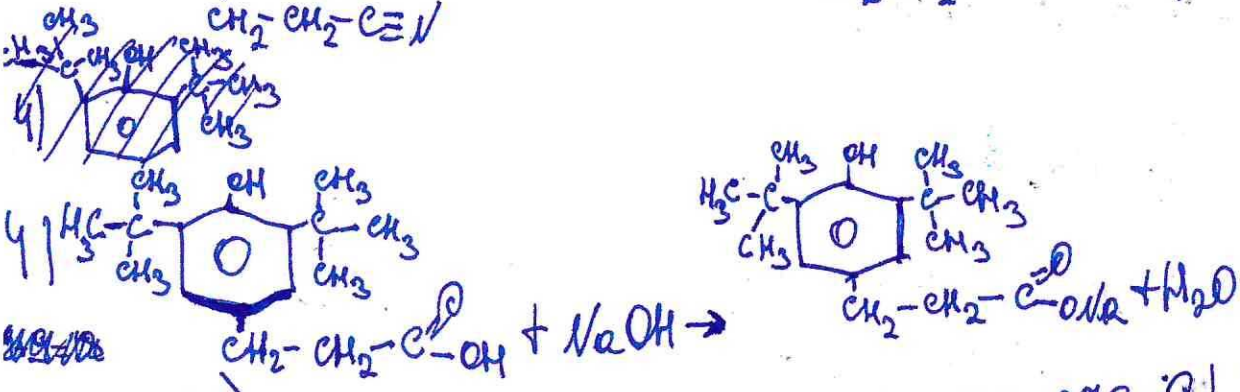
4) 

2

$$m(C_{17}H_{26}O_3) = \frac{C \cdot V_{р\text{-}ра} \cdot M \cdot V_к}{V_п} = \frac{0{,}1 \cdot 0{,}00645 \cdot 278 \cdot 0{,}1}{0{,}01} = 1{,}7931\ г$$

$$\eta(C_{17}H_{26}O_3) = \frac{1{,}7931}{1{,}990} = 0{,}901 \cdot 100\% = 90{,}1\%$$

+ 18

№7.2

1) $CH_3-CH_2-Br + NaC\equiv N \rightarrow CH_3-CH_2-C\equiv N + NaBr$ + 2

2) $CH_3-CH_2-C\equiv N + 2H_2O_2 \longrightarrow CH_3-CH_2-C(=O)-NH_2 + H_2O + O_2$ + 2

3) $CH_3-CH_2-C(=O)-NH_2 + H_2O \xrightarrow{H^+} CH_3-CH_2-C(=O)-OH + NH_3$ +2

4) $CH_3-CH_2-Br + Mg \xrightarrow{эфир} CH_3-CH_2MgBr$ 2

5) $CH_3-CH_2MgBr + CO_2 \rightarrow CH_3-CH_2-C(=O)-OMgBr$ 2

6) $CH_3-CH_2-C(=O)-OMgBr + H_2O \xrightarrow{H^+} CH_3-CH_2-C(=O)-OH + MgOHBr$ 2

№8.2

$D_{H_2} = \frac{M_{ср}}{M(He)} \Rightarrow 6{,}5 \cdot 4 = 26$

Пусть $n(NH_3) = x$, $n(F_2) = y$ $\quad \frac{n_1 M_1 + n_2 M_2}{n_1 + n_2}$

$\frac{17x + 38y}{x + y} = 26$; $12y = 9x$; $y = 0{,}75x$

12

$NH_3 + F_2 \rightarrow NH_4F + ГАЗ$

$M(ГАЗ) = \rho \cdot 22{,}4 = 3{,}168 \cdot 22{,}4 = 71$ г/моль $\Rightarrow 14 + 19y = 71$; $19y = 57$; $y = 3$ $\Rightarrow NF_3$

$4NH_3 + 3F_2 \rightarrow 3NH_4F + NF_3$

$F_2^0 + 1e^- \rightarrow F^{-1}$ | 1 | 6

$N^{-3} - 6e^- \rightarrow N^{+3}$ | 6 | 1

$NF_3 + Cu \rightarrow CuF_2 + ГАЗ$

$M(ГАЗ) = 4{,}643 \cdot 22{,}4 = 104$ г/моль $\Rightarrow 14x + 19y = 104$; $x = 2$; $y = 3$; $14 \cdot 2 + 19 \cdot 3 = 104$ $\Rightarrow N_2F_4$

$2NF_3 + Cu \rightarrow CuF_2 + N_2F_4$

$Cu^0 - 2e^- \rightarrow Cu^{+2}$ | 2 | 1 | 2

$N^{+3} + 1e^- \rightarrow N^{+2}$ | 1 | 2

Лист 3

CuF_2 и NH_4F

$n(NH_4F) = 0{,}75x$

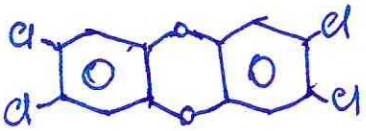
$n(CuF_2) = \frac{1}{2} \cdot 0{,}25x = 0{,}125x$

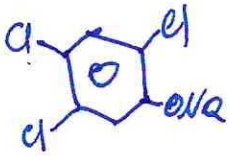
$w(CuF_2) = \frac{0{,}125 \cdot 64 + 38}{0{,}125 \cdot 102 + 0{,}75 \cdot 37} = \frac{12{,}75 \cdot 100}{40{,}5} = 0{,}315 \cdot 100 = 31{,}5\%$

$w(NH_4F) = 100 - 31{,}5 = 68{,}5\%$

№1.2

(A) $C_{12}H_4Cl_4O_2$ – 5x (B) = $(C_6H_2Cl_3ONa)$ – x





$n(A) = 5x$

$n(B) = x$

$m_1 + m_2 = m$ смеси

$5x \cdot 322 + x \cdot 219{,}5 = 50$ г

~~1220~~ 1829,5

$1829{,}5x = 50$

$x = 0{,}027$

$n_1(Cl) = 4 \cdot 5x = 20x = 0{,}054$ моль

$n_2(Cl) = 3 \cdot x = 3x = 0{,}081$ моль

$n\Sigma(Cl) = 23x = 0{,}621$ моль

$m(Cl) = 0{,}621 \cdot 35{,}5 = 22{,}0455$ г

6

№2.2

1 мл – 5 мг

20 мл – x мг $x = \frac{5 \cdot 20}{1} = 100$ мг

$0{,}25\ мг/мл = \frac{100}{V}$

$V(раствора) = \frac{100}{0{,}25} = 400$ мл

V(добавленного р-ра) $= 400 - 20 = 380$ мл

$\ln\frac{C_0}{C_t} = R_t$; $R_t = \frac{\ln 2}{t_{1/2}} = \frac{0{,}69}{280} = 0{,}002464$

$\ln\frac{100}{Z} = \frac{0{,}69}{280} \cdot 350 = 0{,}8625$

6

$\frac{100}{Z} = e^{0{,}8625} = 2{,}37$

$Z = \frac{100}{2{,}37} = 42{,}2$

№5.2

$Mg(OH)_2 \rightleftarrows Mg^{2+} + 2OH^-$ 2

$Rs = \vec{c}(Mg^{2+}) \cdot \vec{c}^2(OH^-)$

Пусть $\vec{c}(Mg^{2+}) = x$, тогда $\vec{c}^2(OH^-)$

$Rs = x \cdot (2x)^2 = 4x^3$

$X = \sqrt[3]{\frac{Rs}{4}} = \sqrt[3]{\frac{6{,}8 \cdot 10^{-12}}{4}} = \sqrt[3]{1{,}7 \cdot 10^{-12}} = 1{,}193 \cdot 10^{-4}$ 2

~~$V = 1{,}193 \cdot 10^{-4}$.~~

$V(Mg(OH)_2) =$

4

№6,2

Пусть $[x(NH_3)_6]Cl_3$ = 1 моль

$$W = \frac{x}{x+102+35,5\cdot 3} = 0,220б$$

$$X = 0,220б(X+208,5)$$

$$X = 0,220бX + 46$$

$$0,7794x = 46$$

$X = 59 + 1 \Rightarrow Co$

$Co + 2HCl \rightarrow CoCl_2 + H_2 \Rightarrow (CoCl_2 \cdot nH_2O)$ 2

Пусть $(CoCl_2 \cdot nH_2O)$ = 1 моль

~~$1+2+n(2+1)=1,203$~~

№4.2

I	C	H
$\frac{96,7}{127} = 0,76$	$\frac{3,05}{12} = 0,25$	$\frac{0,25}{1} = 0,25$
3 :	1 :	1

$n(CH_2I_3) = \frac{17,73}{394} = 0,045$ 2

n