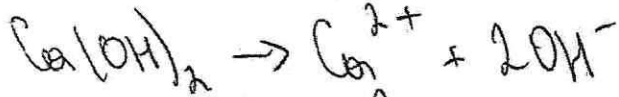


Задача 5.1



$$n(\text{Co(OH)}_2) = \frac{2}{40 + 17 \cdot 2} = 0,027 \text{ моль}$$

Пусть $V_{\text{min}} = x$, тогда $c(\text{Co}^{2+}) = \frac{0,027}{x}$

$$c(\text{OH}^-) = \frac{0,027 \cdot 2}{x}$$

$$K_p = [\text{Co}^{2+}] \cdot [\text{OH}^-]^2 \Rightarrow 6,2 \cdot 10^{-6} = \frac{0,027}{x} \cdot \frac{0,027 \cdot 2^2}{x} \Rightarrow$$

$$\Rightarrow x = 1,78 \text{ л} \quad V_{\text{min}} = 1,78 \text{ л}$$

$$pH = 14 - pOH$$

$$pOH = -\lg(0,027 \cdot 2) = 1,3$$

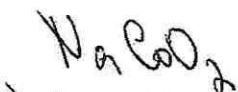
$$pH = 14 - 1,3 = 12,7$$

25

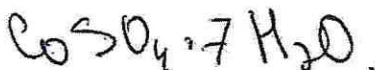
Задача 6.1

$$\omega(\text{Na}_2\text{O}) = 100 - 51,75 = 48,25$$

$$M(x) = \frac{23 + 32}{0,4825} = (23 + 32) = 58,99 \Rightarrow x = \text{Co}$$

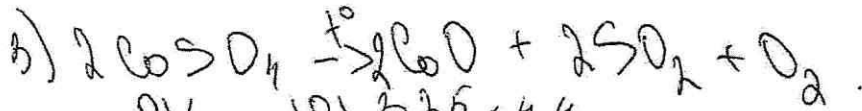


$$\text{CoSO}_4 \cdot x \text{H}_2\text{O} \quad \frac{16(x-4)}{0,5x} = 12,57 \Rightarrow x = 7$$



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

$\Sigma 35$



$$n = \frac{PV}{P_1 V_1} = \frac{101,325 \cdot 4,4}{8,314 \cdot (25+27)} = 0,18 \text{ моль.}$$

~~$n(\text{O}_2) = n(\text{CoO})$~~ (по г. Авогадро), пусть $n(\text{O}_2) = x$.

$$x + 2x = 0,18$$

$$x = 0,06 \text{ моль.}$$

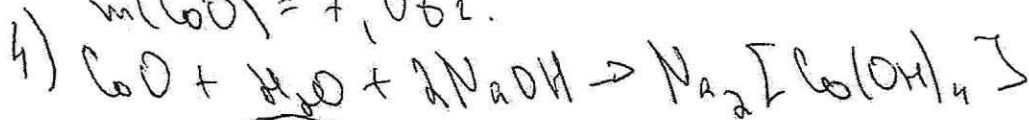
$$n(\text{O}_2) = 0,06 \text{ моль.}$$

$$n(\text{CoSO}_4) = 0,12 \text{ моль.}$$

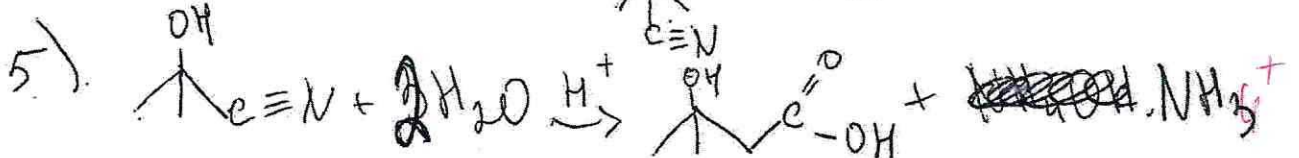
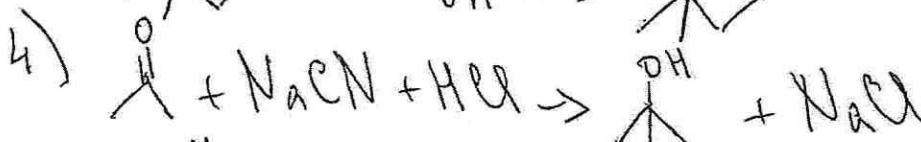
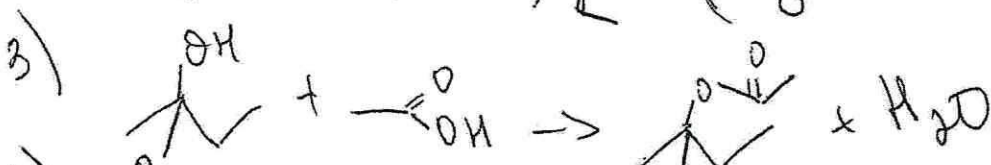
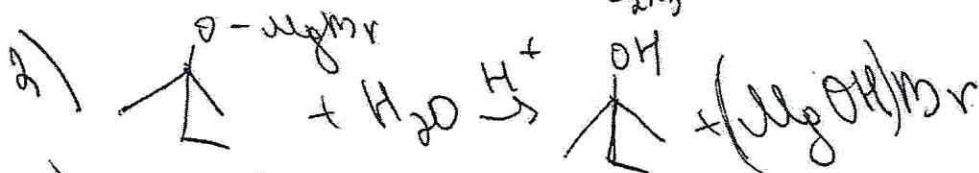
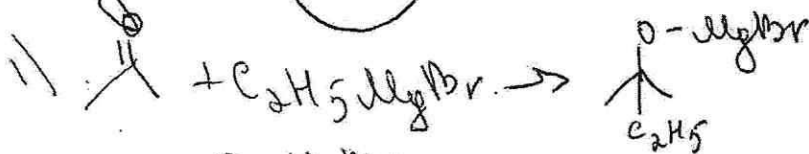
$$m(\text{CoSO}_4 \cdot 7\text{H}_2\text{O}) = 33,72 \text{ г.}$$

$$n(\text{CoO}) = 0,12 \text{ моль.}$$

$$m(\text{CoO}) = 7,08 \text{ г.}$$



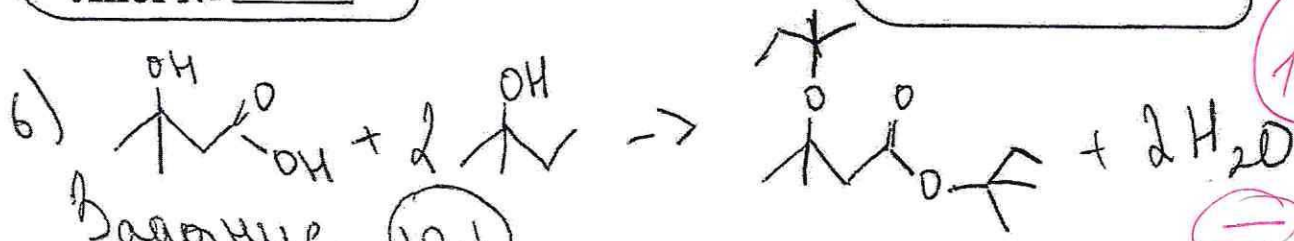
Задача 7.1



85

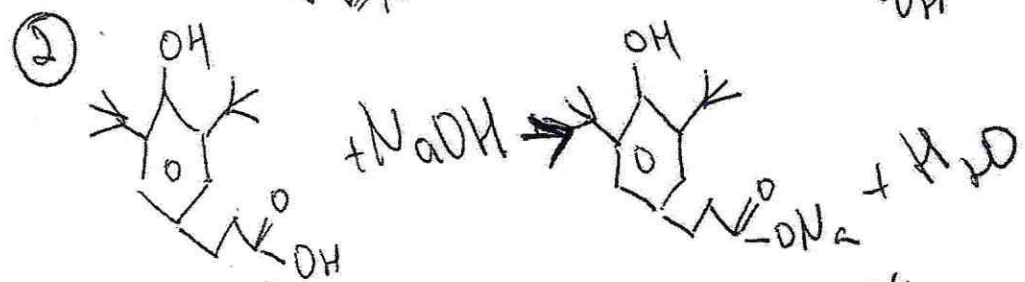
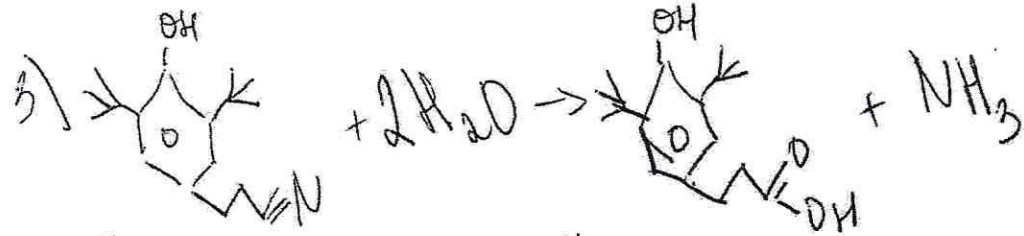
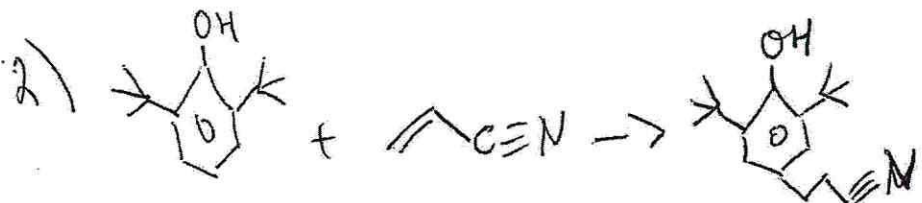
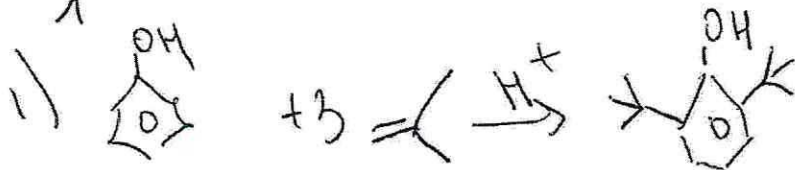


100



—

① CC(C)C1=CC=C(O)C=C1C(=O)O - ореноужамовая кислота.



100

$$n(\text{NaOH}) = \frac{6,8}{1000} \cdot 0,1 = 6,8 \cdot 10^{-4} \text{ моль}$$

$$n(\text{ф.к.}) = n(\text{NaOH}) = 6,8 \cdot 10^{-4} \text{ моль}$$

$$m(\text{ф.к.}) = 0,187 \text{ г}$$



Задача № 4.1

Найдём ~~массу~~ ~~вещества~~ ~~реагента~~ ~~реагент~~:

$$C: H: I = \frac{3,05}{12} : \frac{0,25}{1} : \frac{36,7}{127} = 1:1:3 \Rightarrow CHI_3$$

$$n(CHI_3) = \frac{19,7}{12+1+127 \cdot 3} = 0,05 \text{ моль}$$

Предположим, что $n(CHI_3) = n(\text{соль к.к.})$

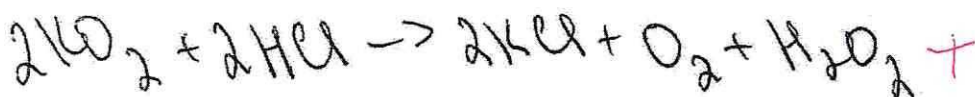
$$M(\text{соль к.к.}) = 12n + 2n - 1 + 3 \cdot 2 + 2 \cdot 3$$

$$M(\text{соль к.к.}) = \frac{4,8}{0,05}$$

$$\Rightarrow 12n + 2n - 1 + 3 \cdot 2 + 2 \cdot 3 = \frac{4,8}{0,05} \Rightarrow n = 3$$

25

Задача № 4.1



$$n(H_2O_2) = n(PbS) = 0,01 \text{ моль}$$

$$m(H_2O_2) = 0,34 \text{ моль}$$

45