

Задача 2.1


$$m(\text{карбон.}) = 10 \text{ мг/мл} \cdot 5 \text{ мл} = 50 \text{ мг}$$

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

$$0,5 = \frac{50 \text{ мг}}{X \text{ мл}} \Rightarrow X = 100 \text{ мл}$$

$$V(\text{NaCl}) = 100 - 5 = 95 \text{ мл}$$

35

$\Sigma = 35 \text{ б.}$


$$50 : 2 = 25 \text{ г (содерж карбон. через 16 ч)}$$

~~$$\frac{28}{16} = 1,75$$~~

через 16 ч — m уменьш. в 2 р
 через 28 ч — m уменьш. в x р

$$x = 3,5 \text{ р.}$$

$$50 : 3,5 = 14,286 \text{ г}$$

$$\frac{14,286}{50} \cdot 100\% = 28,57\%$$

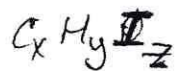
Задача 4.1

$$m(\text{осадка}) = 19,7 \text{ г}$$

$$w(\text{O}) = 3,05\%$$

$$w(\text{I}) = 96,7\%$$

$$w(\text{H}) = 0,25\%$$



$$w = \frac{A_r \cdot \nu \cdot 100\%}{M}$$

$$A_r = \frac{w \cdot M}{\nu \cdot 100\%}$$

Пусть $M_{\text{в.в.е}} = 100 \text{ г/моль}$

$$x = \frac{3,05}{12} = 0,254$$

$$y = 0,25$$



СЕЧЕНОВСКИЙ
УНИВЕРСИТЕТ

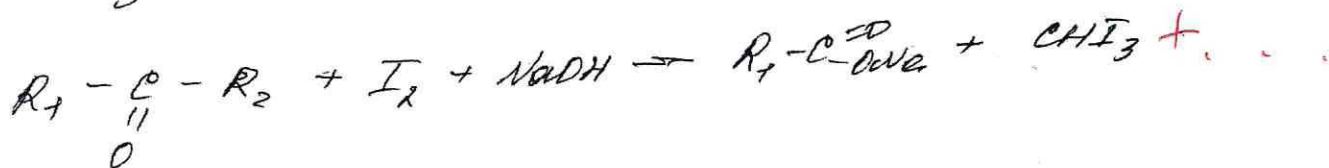


$$z = \frac{96,7}{127} = 0,76$$

$$x : y : z = 0,254 : 0,25 : 0,76 = 1 : 1 : 3 \Rightarrow \text{CHI}_3 \quad 205$$

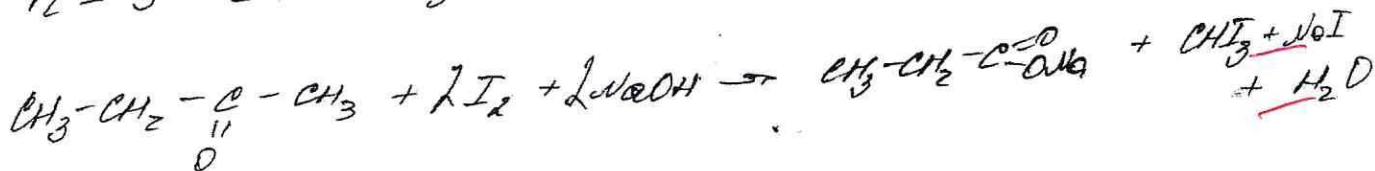
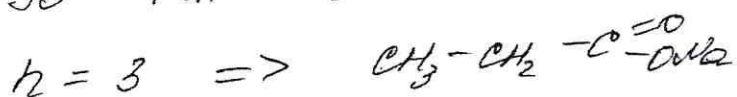
~~$$\text{CHI}_3$$~~

$$\nu(\text{CHI}_3) = \frac{197}{394} = 0,05 \text{ моль}$$



$$\frac{\nu(\text{CHI}_3)}{\nu(R_1COOR_2)} = \frac{1}{1} \Rightarrow \nu(R_1COOR_2) = 0,05 \text{ моль} \Rightarrow M = 96 \text{ г/моль}$$

$$96 = 14n - 1 + 32 + 23$$



Задача 5.1



Пусть $c(\text{Ca(OH)}_2) = x \text{ моль/л} \Rightarrow [\text{Ca}^{2+}] = x \text{ моль/л}, [\text{OH}^-] = 2x \text{ моль/л}$

$$6,2 \cdot 10^{-6} = x \cdot (2x)^2$$

$$6,2 \cdot 10^{-6} = 4x^3$$

$$1,55 \cdot 10^{-6} = x^3$$

$$x = 1,158 \cdot 10^{-6}$$

$$1,158 \cdot 10^{-6} = \frac{0,027 \text{ моль}}{x_1}$$

$$\Rightarrow x = 23316,064$$

$$\frac{\nu(\text{Ca(OH)}_2)}{\nu(\text{OH}^-)} = \frac{1}{2} \Rightarrow \nu(\text{OH}^-) = 0,054 \text{ моль}$$

$$[\text{OH}^-] = \frac{0,054}{23316,06} = 0,23 \cdot 10^{-5} \text{ моль/л}$$

$$pOH = 5,635$$

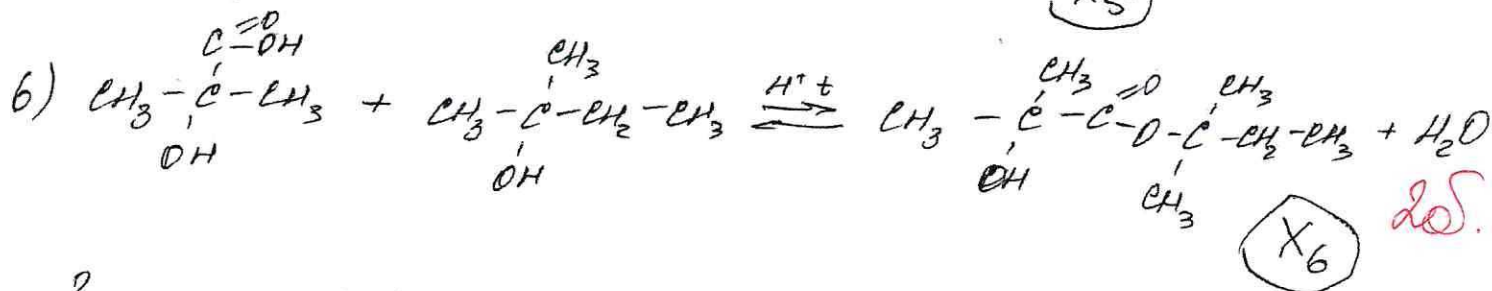
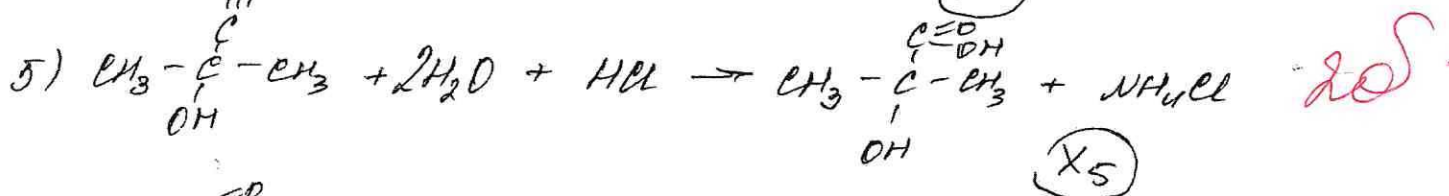
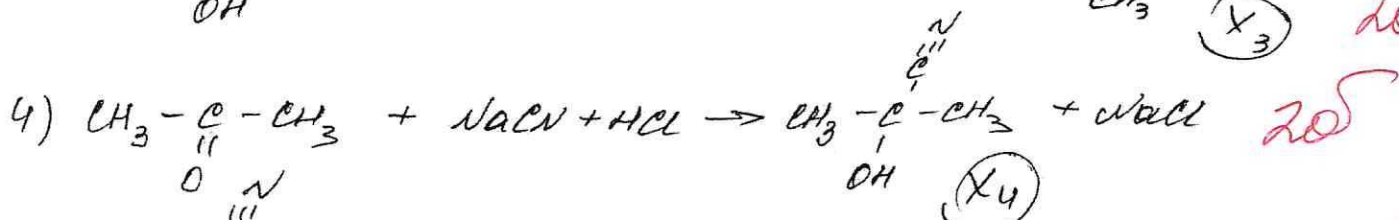
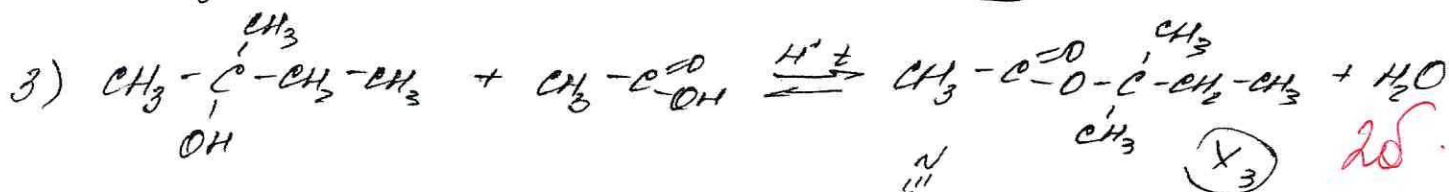
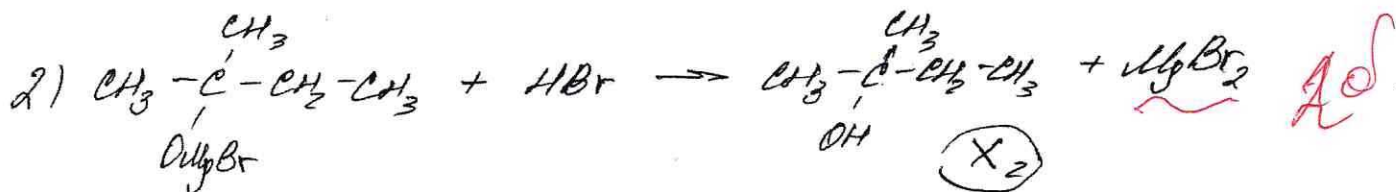
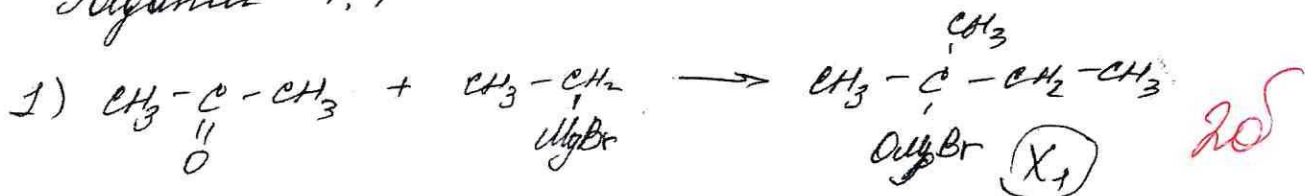
$$pH = 14 - 5,6 = 8,365$$



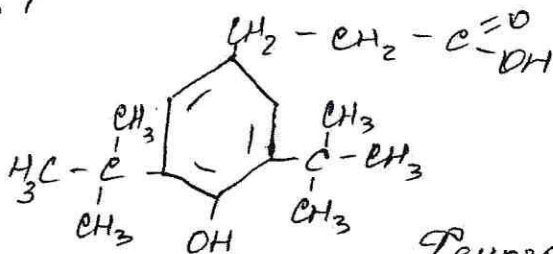
СЕЧЕНОВСКИЙ
УНИВЕРСИТЕТ

10 x 14 4

Задача 7.1



Задача 10.1

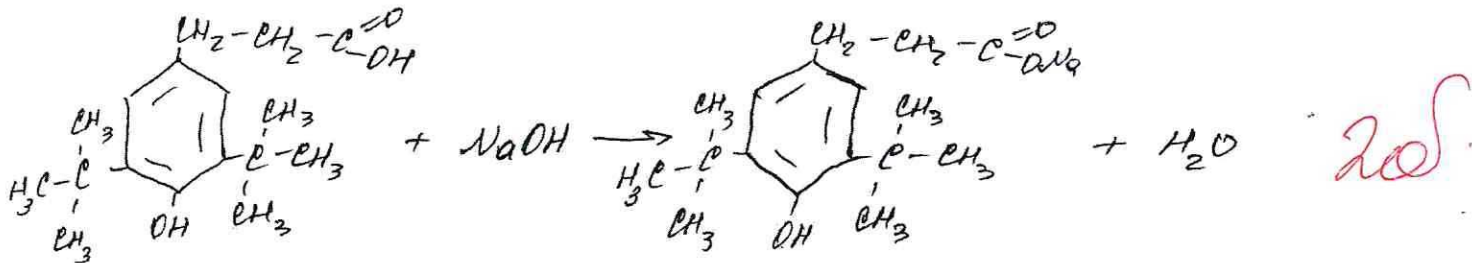
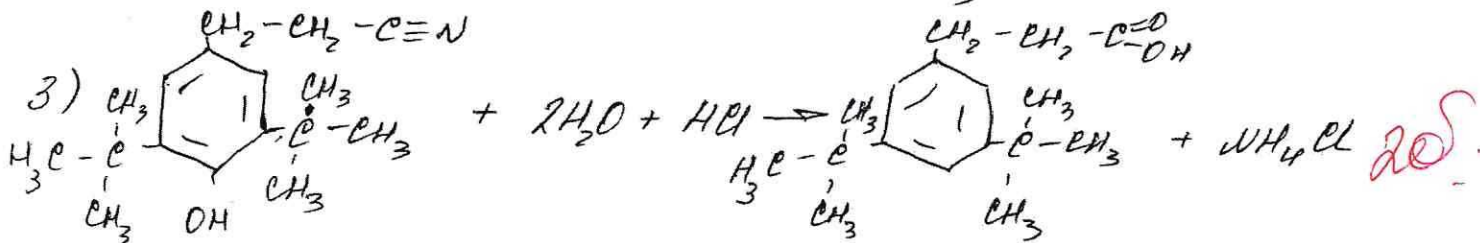
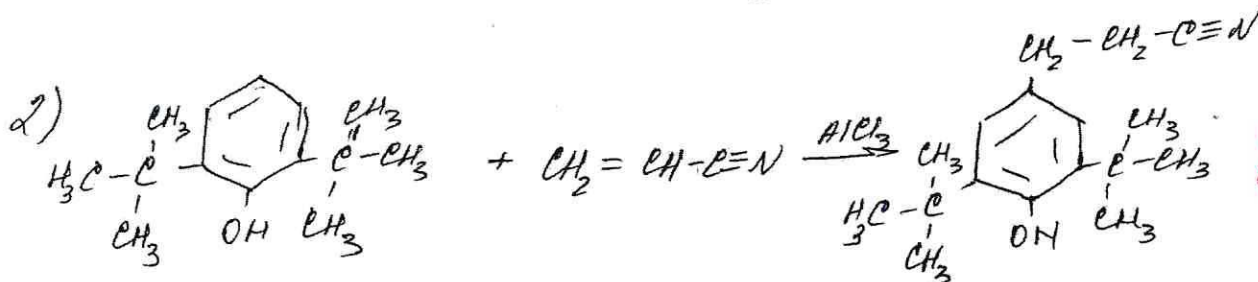
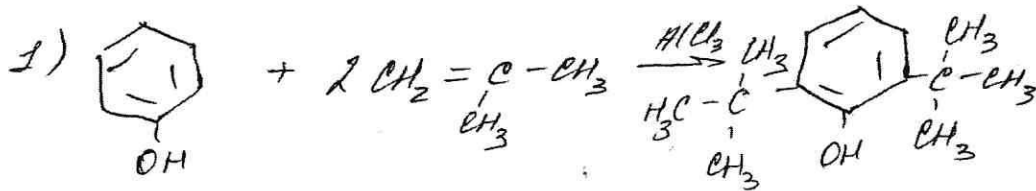


Теннозановая к-та

2б.

§ СЕЧЕНОВСКИЙ
УНИВЕРСИТЕТ

10 10 10 10



$$0,1 = \frac{D(NaOH)}{0,0068} \Rightarrow D(NaOH) = 0,00068 \text{ моль}$$

$$\frac{D(NaOH)}{D(KMA)} = \frac{1}{1} \Rightarrow D(KMA) = 0,00068 \text{ моль}$$

$$C(KMA) = \frac{0,00068}{0,01} = 0,068 \text{ моль/л}$$

$$0,068 = \frac{D(KMA)}{0,05} \Rightarrow D(KMA) = 0,0034 \text{ моль} \Rightarrow M = 0,9452$$

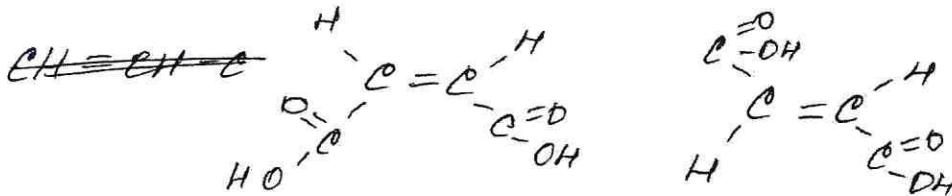
$$W = \frac{0,9452}{0,995} \cdot 100\% = 95\%$$

Задача 3.1



$$\frac{\nu(\text{KOH})}{\nu(\text{к-тв})} = \frac{1}{1} \Rightarrow \nu(\text{к-тв}) = 0,04 \text{ моль} \Rightarrow M = 58 \text{ г/моль} \quad \times$$

$$\frac{\nu(\text{KOH})}{\nu(\text{к-тв})} = \frac{2}{1} \Rightarrow \nu(\text{к-тв}) = \frac{0,02}{1} \text{ моль} \Rightarrow M = 116 \text{ г/моль}$$



20

