







Бланк ответов

Задача 1

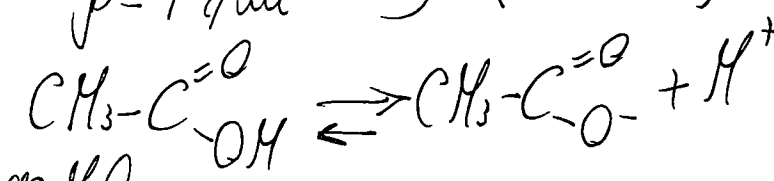
$V(\text{р-ра}) = 500 \text{ мл}$   
 $\omega(\text{р-ра}) = 1\%$   
 $\rho = 1 \text{ г/мл}$

$m(\text{р-ра}) = 1\%$

$\frac{500 \text{ г}}{100} = 5 \text{ г}$

$\Rightarrow m(\text{р-ра}) = 500 \text{ г} - 100\%$

$m(\text{CH}_3\text{COOH}) = 5 \text{ г} \Rightarrow n(\text{CH}_3\text{COOH}) = \frac{5 \text{ г}}{60 \text{ г/моль}} = 0,0833 \text{ моль}$



$\frac{n(\text{CH}_3\text{COOH})}{n(\text{H}^+)} = \frac{1}{1} \Rightarrow n(\text{H}^+) = 0,0833 \text{ моль}$

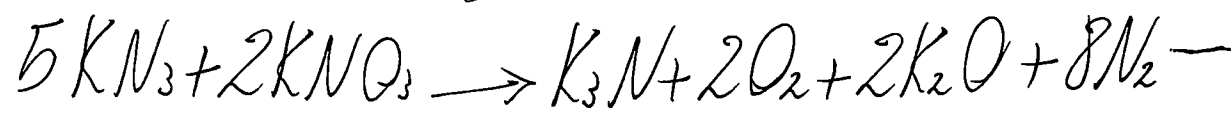
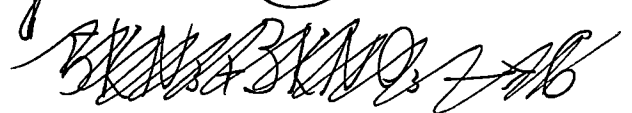
$c[\text{H}^+] = \frac{0,0833 \text{ моль}}{0,5 \text{ л}} = 0,1666 \text{ моль/л}$

$\text{pH} = -\lg[\text{H}^+] = 0,778$

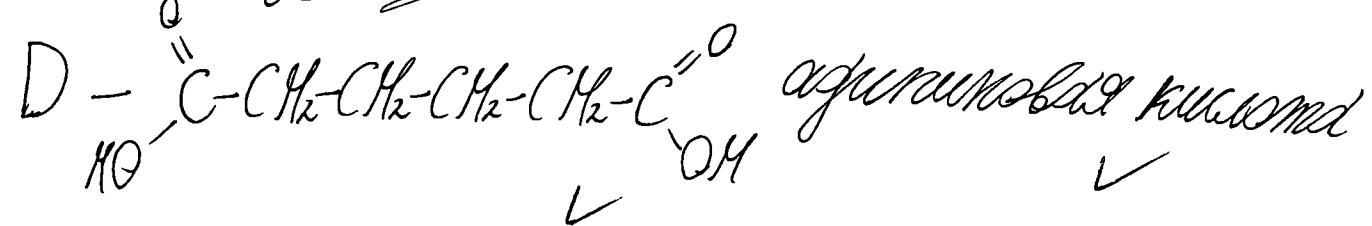
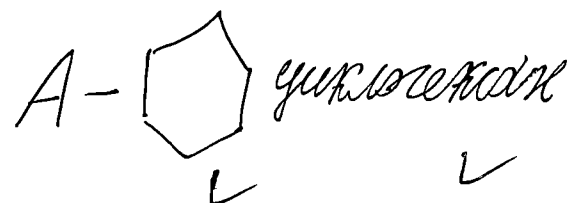
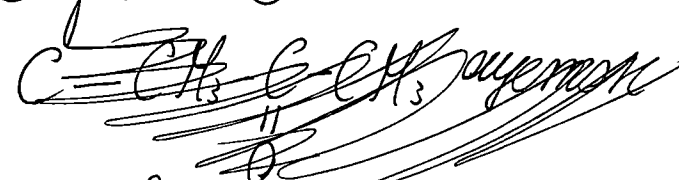
после добавления H<sub>2</sub>O  
 $c[\text{H}^+] = \frac{0,0833 \text{ моль}}{0,5 + 0,6 \text{ л}} = 0,07573 \text{ моль/л}$

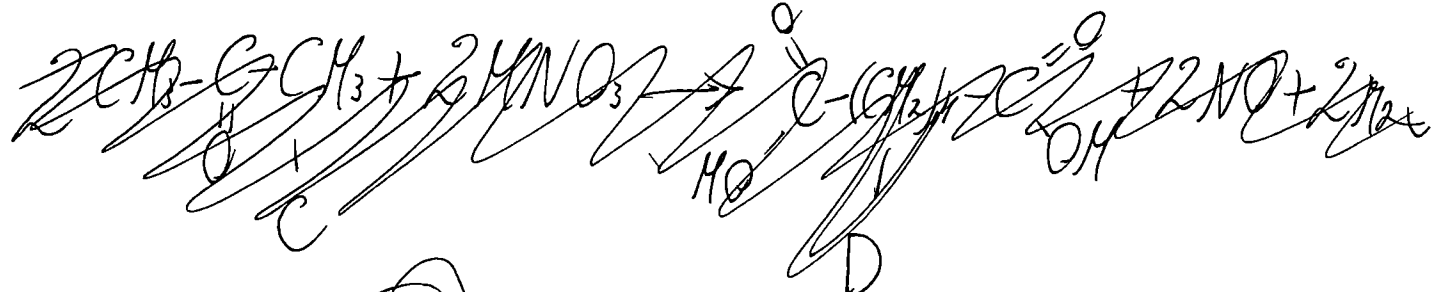
pH раствора увеличился (было 0,778, стало 1,121) — среда стала более щелочной  
 pH =  $-\lg[\text{H}^+] = -\lg 0,07573 = 1,121$

Задача 2



Задача 3





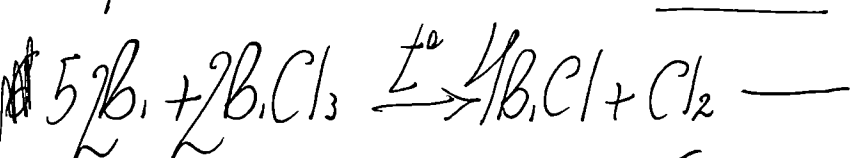
Задача 4 (55)

$b \cdot \text{Cl}_y$   $w(\%) = \frac{A \cdot (\%) \cdot n \cdot 100}{M(b-bd)} \Rightarrow n = \frac{w(\%) \cdot M(b-bd)}{A \cdot (\%) \cdot 100}$

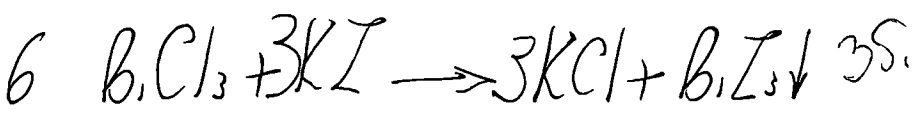
$w(\text{Br}) = 83,48\%$   
 $w(\text{Cl}) = 16,52\%$

Примем  $M(b-bd) = 100 \text{ г/моль}$   
 $x = \frac{83,48}{209} = 0,4$      $y = \frac{16,52}{35,5} = 0,4653$

$x : y = 0,4 : 0,4653 = 1 : 1 \Rightarrow \underline{\text{b} \cdot \text{Cl}}$

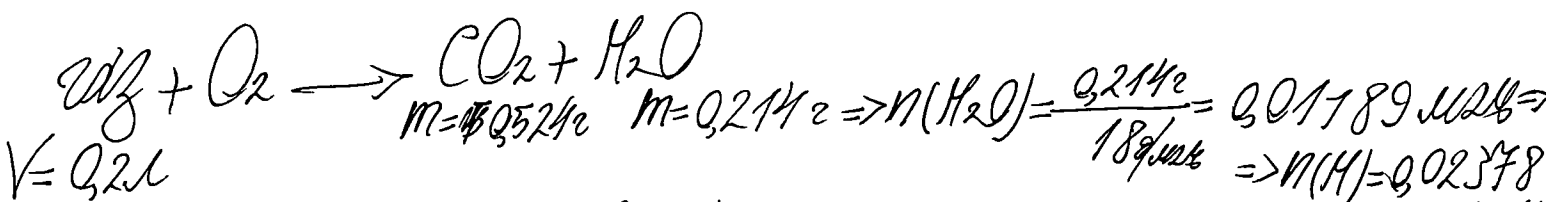


$2 [\text{b}_2\text{Cl}_8]^{-7} - 8 + 6 = (-2) - 1$      $[\text{b}_1\text{Cl}_5]^{-7} - 5 + 3 = (-2) - m$



Задача 5 (45)

$D(\text{возд}) = 0,828$      $0,828 = \frac{M(\text{возд})}{29} \Rightarrow M(\text{возд}) = 24 \text{ г/моль}$  15



$n = \frac{0,2 \text{ л}}{22,4 \text{ л/моль}} = 0,00893 \text{ моль}$      $n(\text{CO}_2) = \frac{0,524 \text{ г}}{44 \text{ г/моль}} = 0,01191 \text{ моль} \Rightarrow n(\text{C}) = 0,01191 \text{ моль}$

$\text{C}_x\text{H}_y$      $x = 0,02378$      $0,01191 = 2 : 1$      $\underline{\text{C}_2\text{H}_7}$      $\text{A-CH=CH}$

E  $w(\text{C}) = 73,85\%$      $w(\%) = \frac{A \cdot (\%) \cdot n \cdot 100}{M(b-bd)} \Rightarrow n = \frac{w(\%) \cdot M(b-bd)}{A \cdot (\%) \cdot 100}$

$w(\text{H}) = 13,85\%$   
 $w(\text{O}) = 12,3\%$     Примем  $M(b-bd) = 100 \text{ г/моль}$      $\text{C}_x\text{H}_y\text{O}_z$

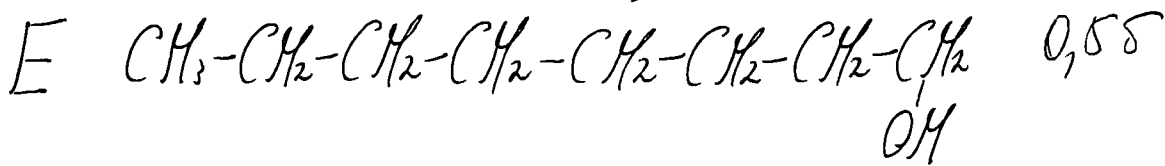
Линия отреза

Бланк ответов

~~$\frac{43,85}{12} = 3,654$~~   ~~$\frac{13,85}{7} = 1,979$~~   ~~$\frac{12,3}{16} = 0,76875$~~

$$X = \frac{43,85}{12} = 3,654 \quad Y = \frac{13,85}{7} = 1,979 \quad Z = \frac{12,3}{16} = 0,76875$$

$$X \cdot Y \cdot Z = 3,654 \cdot 1,979 \cdot 0,76875 = 5,5 \quad C_8H_{18}O$$



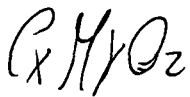
F  $w(C) = 65,75\%$   $w(O) = \frac{A_r(O) \cdot n}{M(b-d-f)} \Rightarrow n = \frac{w(O) \cdot M(b-d-f)}{A_r(O) \cdot 100}$

$w(H) = 12,33\%$

Пусть  $M(b-d-f) = 100$  г/моль

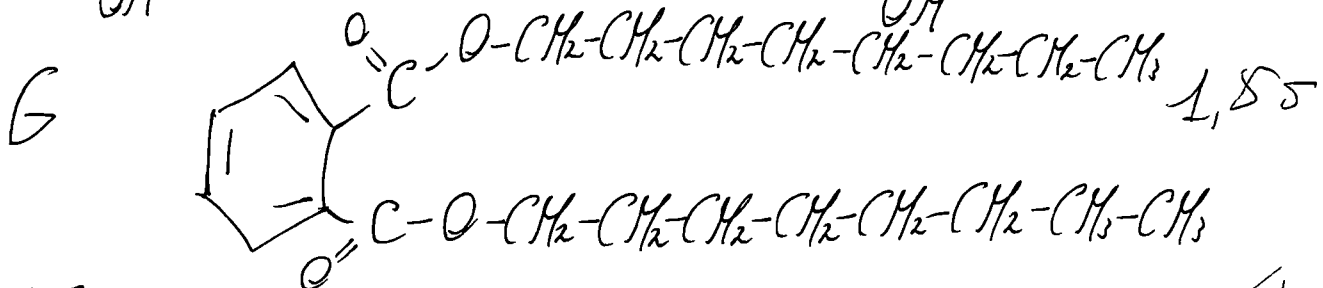
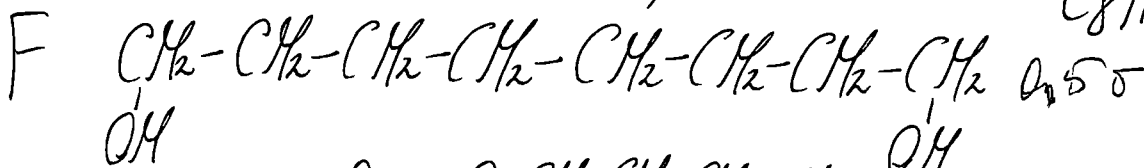
$w(O) = 21,92\%$

$$X = \frac{65,75}{12} = 5,479 \quad Y = \frac{12,33}{1} = 12,33$$



$$Z = \frac{21,92}{16} = 1,37$$

$$X \cdot Y \cdot Z = 5,479 \cdot 12,33 \cdot 1,37 = 92 \quad C_8H_{18}O_2$$



Z  $w(C) = 67,1\%$   $w(O) = \frac{A_r(O) \cdot n}{M(b-d-z)} \Rightarrow n = \frac{w(O) \cdot M(b-d-z)}{A_r(O) \cdot 100}$

$w(H) = 10,49\%$

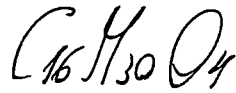
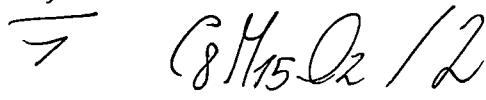
Пусть  $M(b-d-z) = 100$  г/моль

$w(O) = 22,41\%$   $C_8H_{18}O_2$

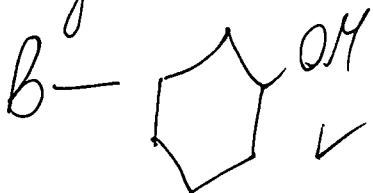
~~X = 5,592~~

$$X = \frac{67,1}{12} = 5,592 \quad Y = \frac{10,49}{1} = 10,49 \quad Z = \frac{22,41}{16} = 1,4$$

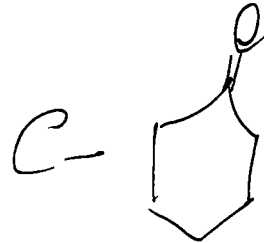
$$X \cdot Y \cdot Z = 5,592 \cdot 10,49 \cdot 1,4 = 81,5 \cdot 1/2$$



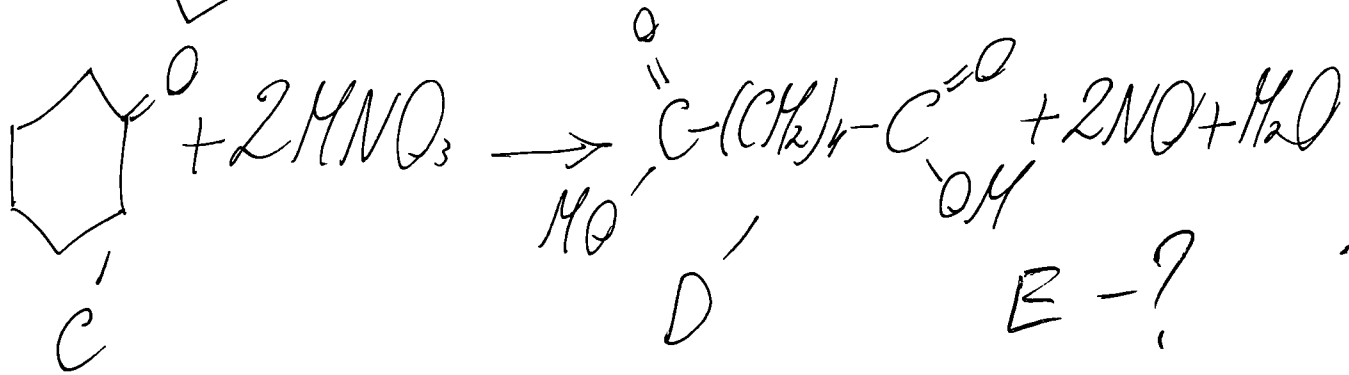
Задача 3



циклопентанол

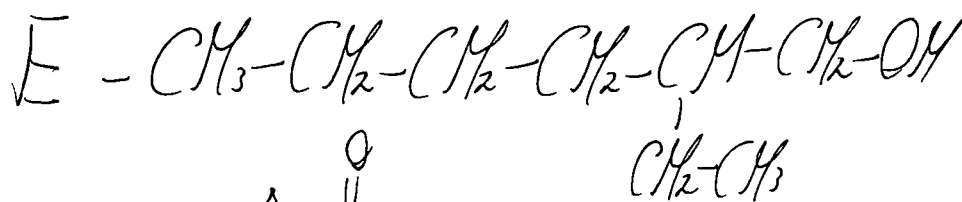
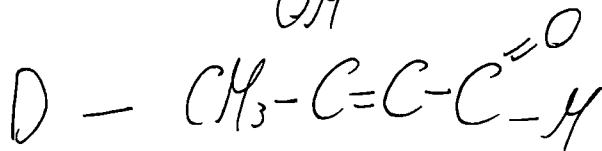
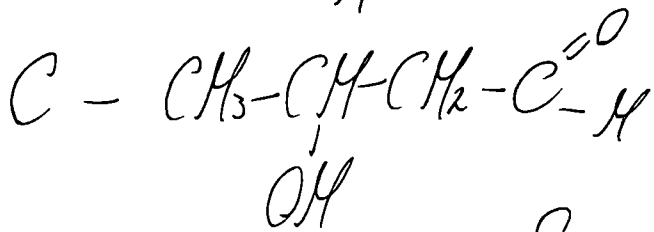
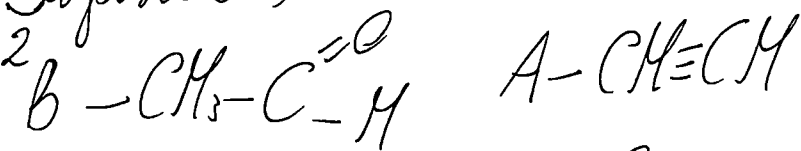


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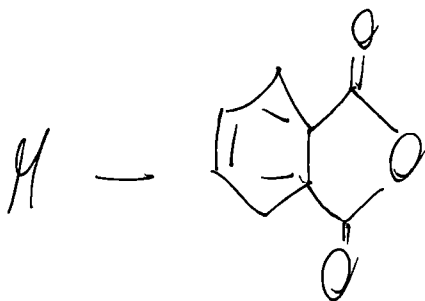


Е - ? 16

Задача 5



При наличии нескольких  
тавтомер оцениваем  
наименее преобла-  
дающий



Линия отреза

## Бланк ответов

