

.1

1.

«

»

(1), (2)

2

150<sup>0</sup>

1.

100

1

2 ,

0,58

=1,71

1, =2,19

2.

10,0

10,0

=0.1 / .

1 2

1 2

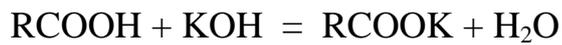
(1% KMnO<sub>4</sub>

)

1 2.

1

1.



C<sub>1</sub>=0,1 / .

n=0,1×0,1 = 0,01

V<sub>1</sub> = C<sub>2</sub>V<sub>2</sub>

0,58 .

= 58 /

1

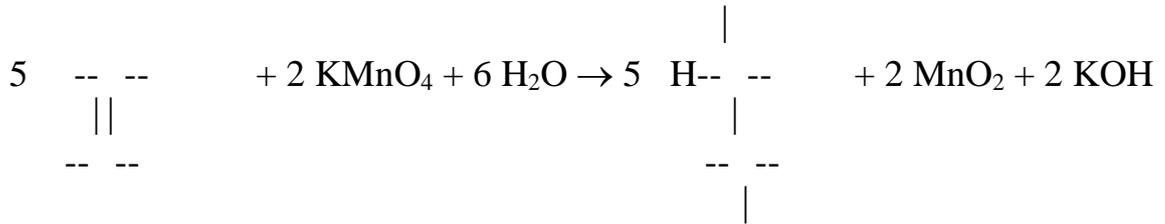
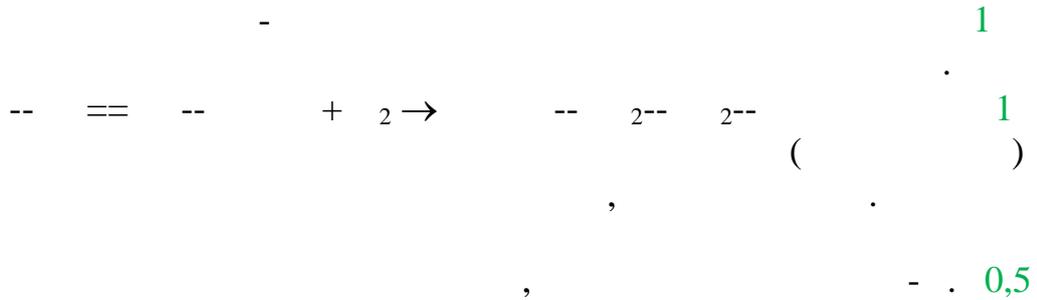
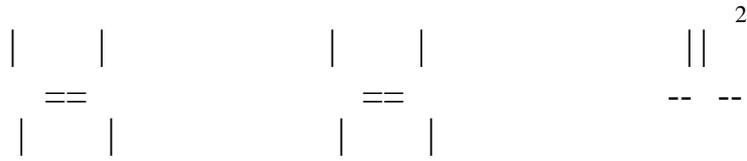
2.

=116 /

1

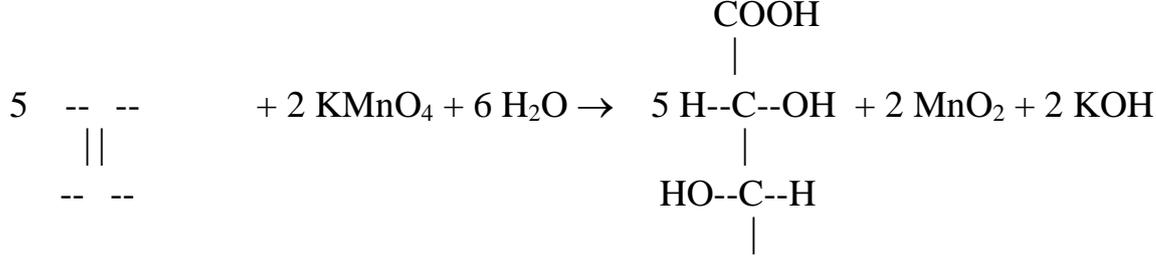
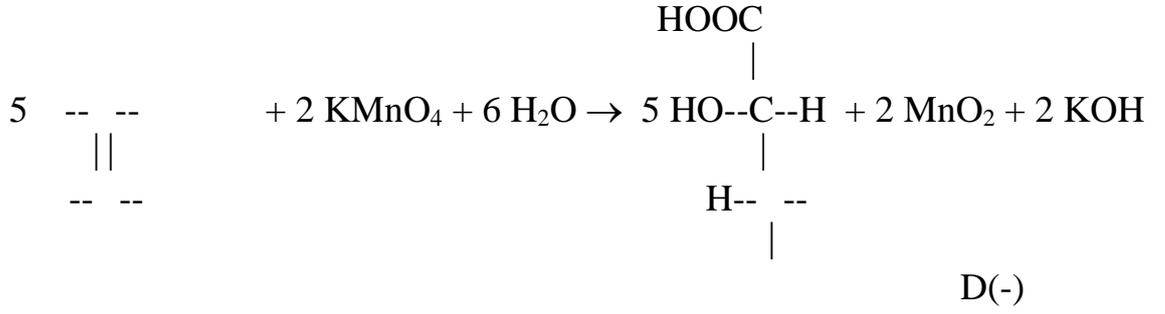
4 4 4.

( ), ( ),

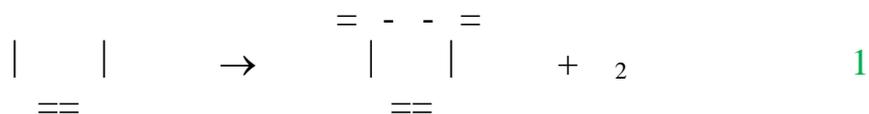
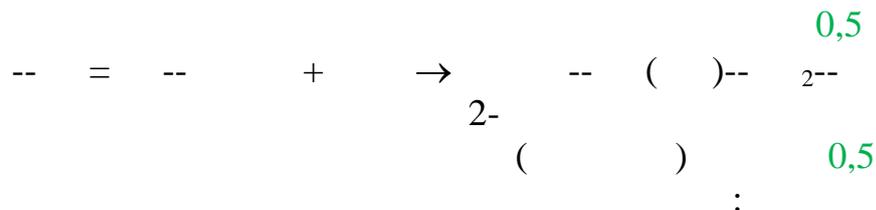
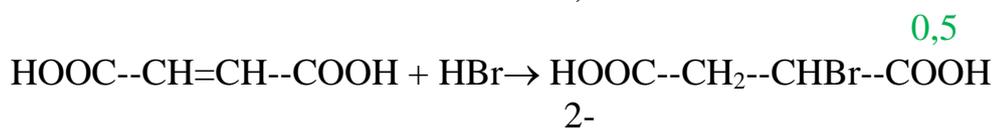
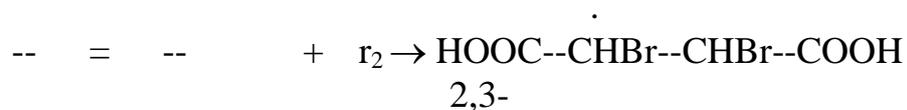


2,3- ( - )

, . 1



COOH L(+)  
( )  
0,5



(  
2 6 6 +5 2 → 2 4 2 3 +4 2 ):  
0,5

-

.

10

2.

1894 - , 1,875 / .

40

14.

,

.

.

1

1,5

150 ° ,

42,42 %.

?

?

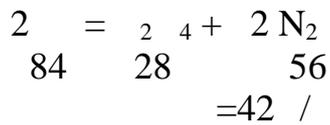
$$=1,875 \times 22,4 = 42 /$$

$$=28 /$$

1

$$28 / \quad N_2.$$

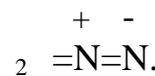
: = 1:2. 1



84 / 2

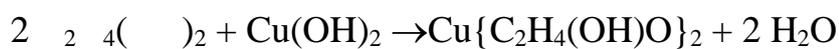
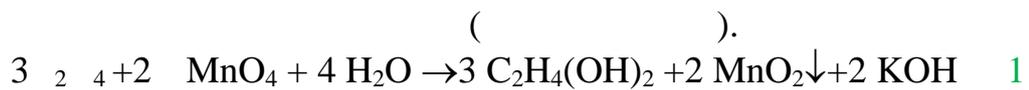
$2N_2 -$

1



2 ∴,

1



$$2N_2 + 1,5 O_2 = CO_2 + H_2O + N_2 \quad M = (44 + 18 + 28):3 = 30 / \\ 150^0 \quad D_{H_2} = 15.$$

$$=36. D_{H_2}=18.$$



$$\omega(F) = 2,0:114,5 = 0,0175 = 1,75\% \quad / \quad 1$$

$$\text{HF} \leftrightarrow \text{H}^+ + \text{F}^- \quad \text{pH} = 2,1 \quad C_{\text{H}^+} = 7,94 \times 10^{-3} \quad /$$

$$\alpha = 7,94 \times 10^{-3} / 0,1 = 7,94 \times 10^{-2} \quad / \quad 1$$

$$= \alpha^2 / (1 - \alpha); = 0,1 \times (7,94 \times 10^{-2})^2 / (1 - 0,0794) = 6,85 \times 10^{-4} \quad / \quad 1$$

	$\alpha$	$\alpha^+$		
0,1	0,0794	0,00794	2,1	
0,01	0,260	0,00260	2,58	1
0,001	0,556	0,000556	3,25	1
				10 %.
$(1 - \alpha) / \alpha^2$	= 0,062			1

10

4.

$$-28,8 \times 10^{-19}$$

?

n=18.

Ar, HCl, H<sub>2</sub>S, PH<sub>3</sub>, SiH<sub>4</sub>, F<sub>2</sub>, HOF, CH<sub>3</sub>F, CH<sub>3</sub>OH, CH<sub>3</sub>NH<sub>2</sub>, H<sub>2</sub>O<sub>2</sub>, N<sub>2</sub>H<sub>4</sub>, NH<sub>2</sub>OH, NH<sub>2</sub>F

0,25

3

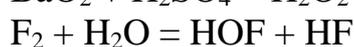
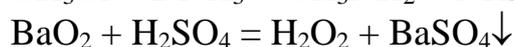
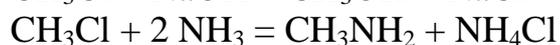
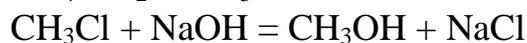
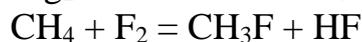
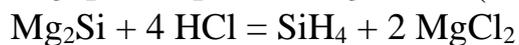
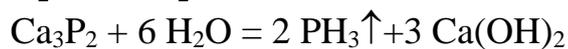
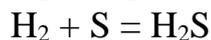
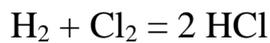
: Ar, HCl, H<sub>2</sub>S, SiH<sub>4</sub>, F<sub>2</sub>, CH<sub>3</sub>F, CH<sub>3</sub>NH<sub>2</sub>, NH<sub>2</sub>F

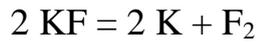
: HOF, CH<sub>3</sub>OH, H<sub>2</sub>O<sub>2</sub>, N<sub>2</sub>H<sub>4</sub>

: NH<sub>2</sub>OH

0,1

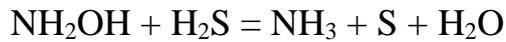
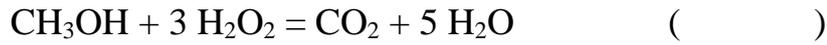
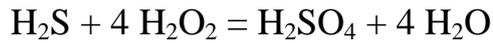
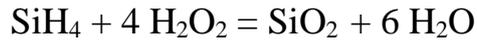
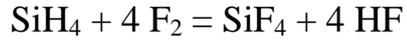
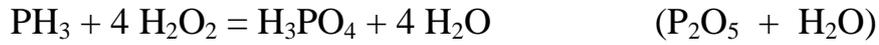
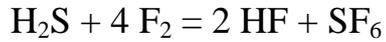
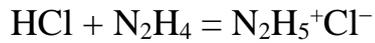
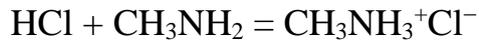
1





0,3

3



0,3

3

10

5.

β-

12,25

${}^6\text{Li} \text{ } {}^3\text{H}$ .

5,6

4,5

0<sup>0</sup>

24,5

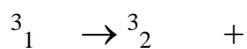
?

?

20

2

${}^6\text{Li} \text{ c}$



$1/2 = 12,25$

1



1

m=4,5 g. n=0,5 mol			
	=101300	· =273	· V=0,0056 <sup>3</sup>
		0,25	· 1
	12,25		,
			1
24,5			,
75%			3
0,5×0,75=0,375			1
			1
= 0,375×8,314×273/0,0056= 151990			1
0,5		= 202 600	· 1
		:	
$^{14}_7\text{N} + ^1_0\text{n} \rightarrow ^3_1\text{H} + 3 ^4_2\text{He}$			2
		:	
$^6_3\text{Li} + ^1_0\text{n} \rightarrow ^3_1\text{H} + ^4_2\text{He}$			1
-----			
			10

.2.

1.

» (1), (2) «

100 1, 2,

0,58 . =1,65

1, =1,72 2.

10,0 10,0 =0.1 / .

1 2

2

, (1% KMnO<sub>4</sub> )

1

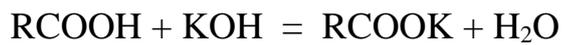
( )

1,695%.

2

1, 2.

1.



C<sub>1</sub>=0,1 / .

0,58 .

$$n = 0,1 \times 0,1 = 0,01$$

$$V_1 = C_2 V_2$$

$$= 58 /$$

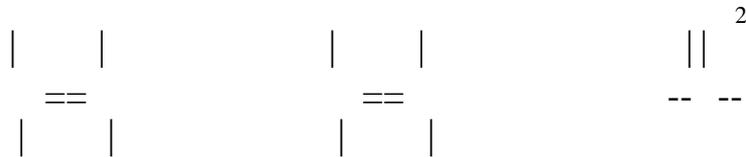
.0,5

2.

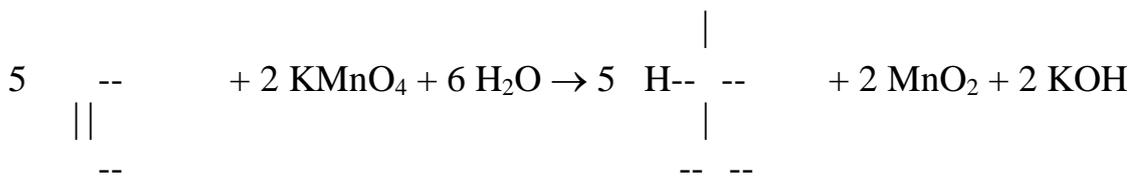
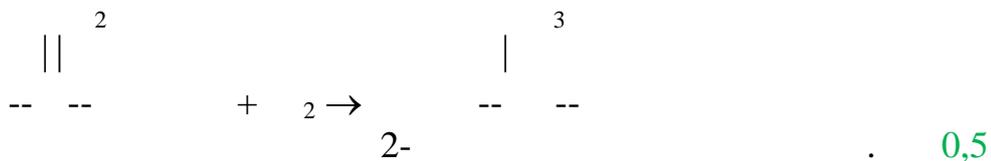
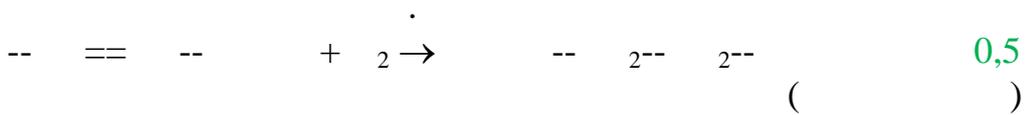
$$= 116 /$$

.0,5

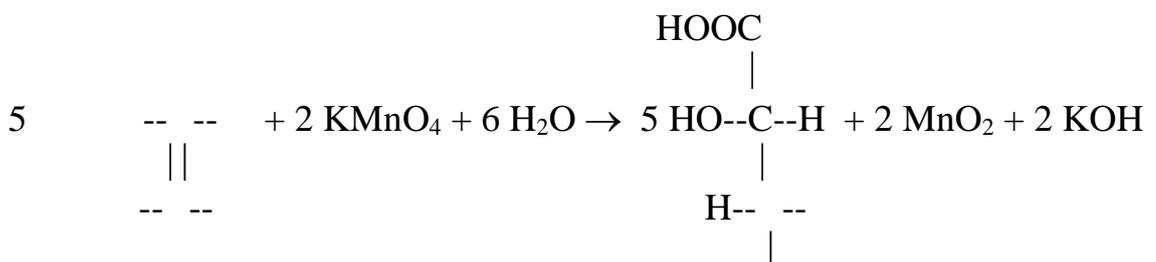
( ), 2-



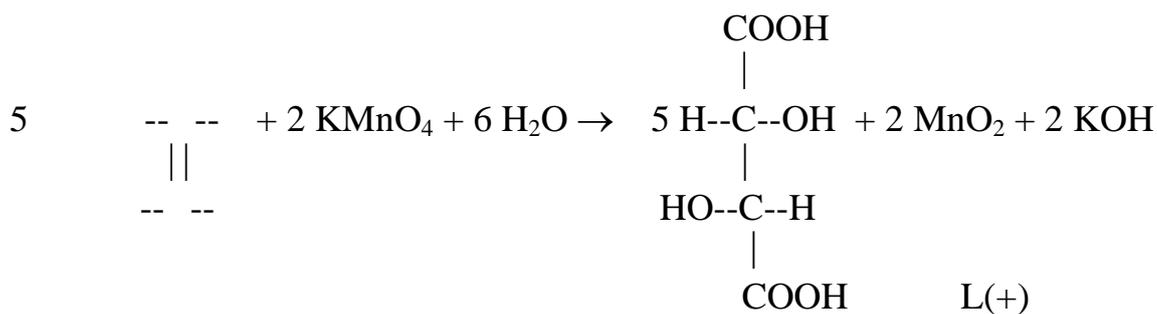
2- - 1



2,3- ( - ) 0,5



D(-)

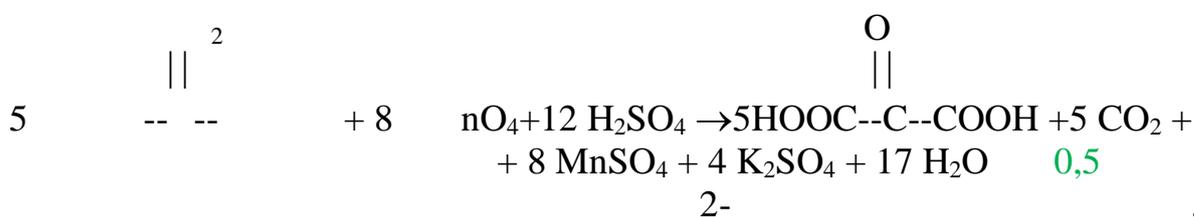


L(+)

1

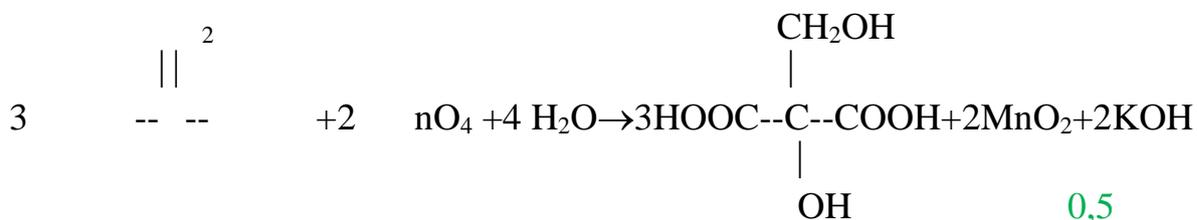
(2) - - , .

(1) 2-

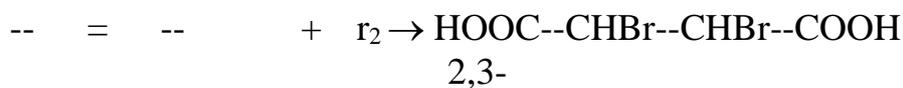


0,5

2-

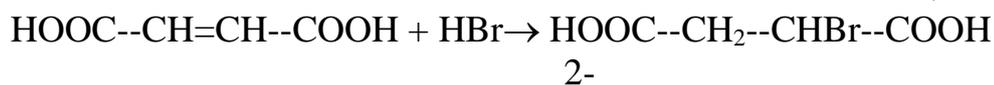


0,5



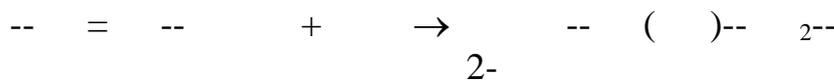
2,3-

0,5



2-

0,5

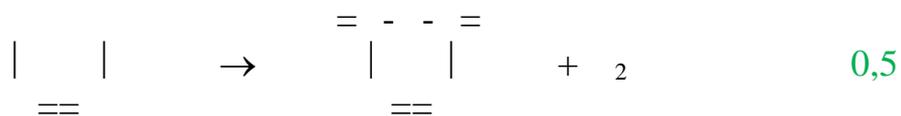


2-

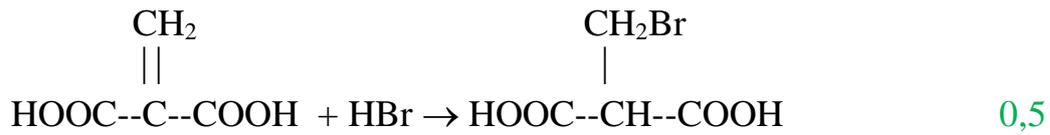
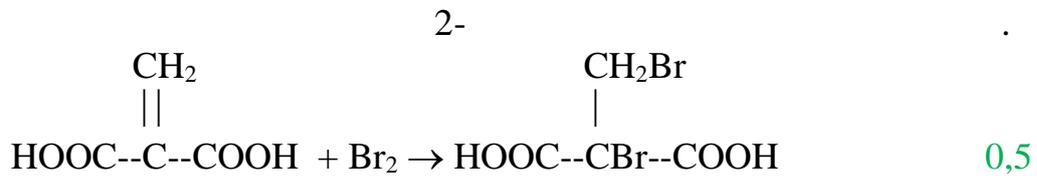
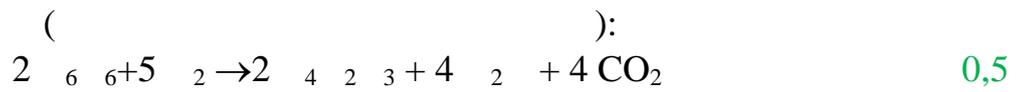
0,5

( )

:



0,5



10

2.

1894

1,875 / .

40

14.

homo sapiens.

13.

42,42 %.

?

?

$$=1,875 \times 22,4 = 42 /$$

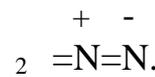
$$= 28 /$$

1

$$= 28 / \quad N_2. \quad : = 1:2. \quad 1$$

$$2 \quad = \quad 2 \quad 4 + \quad 2 \quad N_2$$
$$84 \quad 28 \quad 56 \quad 84$$
$$= 42 / \quad , \quad 2N_2 - \quad , \quad 2$$

1

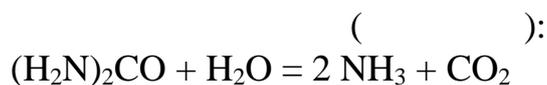


2 ∴,

1



0,5





$$\alpha = 7,94 \times 10^{-3} / 0,1 = 7,94 \times 10^{-2} \quad 1$$

$$= \alpha^2 / (1 - \alpha); = 0,1 \times (7,94 \times 10^{-2})^2 / (1 - 0,0794) = 6,85 \times 10^{-4} \quad / \quad 1$$

/	$\alpha$	+	/	
0,1	0,0794	0,00794	2,1	
0,01	0,260	0,00260	2,58	1
0,001	0,556	0,000556	3,25	1
				10 %.
				1

$$= (1 - \alpha) / \alpha^2 = 0,062 \quad / \quad .$$

10

#### 4.

%( ) 78,1 21,0 0,9

?

n=14, 16, 18.

18

HCl, H<sub>2</sub>S, PH<sub>3</sub>, SiH<sub>4</sub>, F<sub>2</sub>, HOF, CH<sub>3</sub>F, CH<sub>3</sub>OH, CH<sub>3</sub>NH<sub>2</sub>,  
H<sub>2</sub>O<sub>2</sub>, N<sub>2</sub>H<sub>4</sub>, NH<sub>2</sub>OH, NH<sub>2</sub>F, 2 6.

0,25

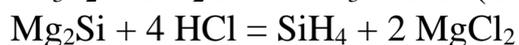
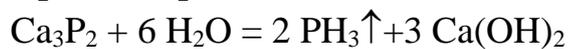
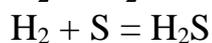
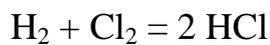
: HCl, H<sub>2</sub>S, SiH<sub>4</sub>, F<sub>2</sub>, CH<sub>3</sub>F, CH<sub>3</sub>NH<sub>2</sub>, NH<sub>2</sub>F, 2 6.

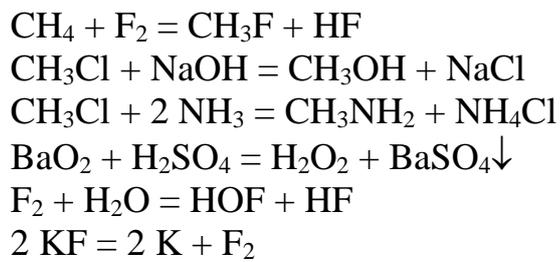
: HOF, CH<sub>3</sub>OH, H<sub>2</sub>O<sub>2</sub>, N<sub>2</sub>H<sub>4</sub>

: NH<sub>2</sub>OH

0,1

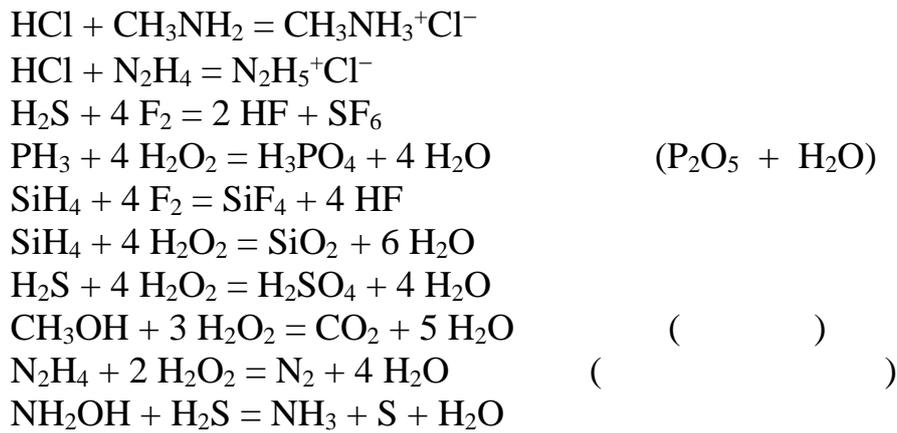
1





0,3

3



0,3

3

10

5.

β- 12,25

20

2

<sup>6</sup>Li c

2,8

2,2

0<sup>0</sup>

24,5

?

?

?

$${}^3_1\text{H} \rightarrow {}^3_2\text{He} + \text{e}^- \quad \text{Energy} = 12,25 \text{ MeV} \quad 1$$



$m = 2,2 \text{ g} \quad n = 0,1 \text{ mol}$   
 $\rho = 101300 \text{ kg/m}^3 \quad T = 273 \text{ K} \quad V = 0,0028 \text{ m}^3$   
 $\rho = 0,125 \text{ g/cm}^3 \quad V = 0,05 \text{ m}^3$

$\text{Energy} = 12,25 \text{ MeV}$   
 $24,5 \text{ MeV}$

$75\%$   
 $0,1 \times 0,75 \times 2,5 = 0,1875$

$0,1 \times 0,75 \times 2,5 = 0,1875$

$= 0,1875 \times 8,314 \times 273 / 0,0028 = 151990$

$0,2 \text{ g} \quad 0,05 \text{ m}^3$   
 $= 202 \text{ } 654$



) ( , 1