

2013/2014 . .

9

9-1.

22 OF<sub>2</sub> / . O-F  
 498 159 / . O<sub>2</sub> F<sub>2</sub>  
 « ».

9-1.

(1):  
 $F_{2( )} + 1/2O_{2( )} = OF_{2( )} + 22$  . (1)  
 — ( \* ), (CH<sub>4</sub>,  
 NH<sub>3</sub>, H<sub>2</sub>O . . )  
 1

O<sub>2</sub>, F<sub>2</sub> OF<sub>2</sub> :  
 $2O = O_{2( )} + 498$  ; (2)  
 $2F = F_{2( )} + 159$  ; (3)  
 $F + 1/2O = 1/2OF_2 + Q_x$ . (4)  
 $Q_x$  (4) — O-F.  
 $Q_x$  (4), (1), (2)  
 (3) 0,5; 0,25 0,5. :  
 $Q_x = 0,25 \cdot 498 + 0,5 \cdot 159 + 0,5 \cdot 22 = 215$  ( / ).  
 : E (O-F) = 215 / .

\* —

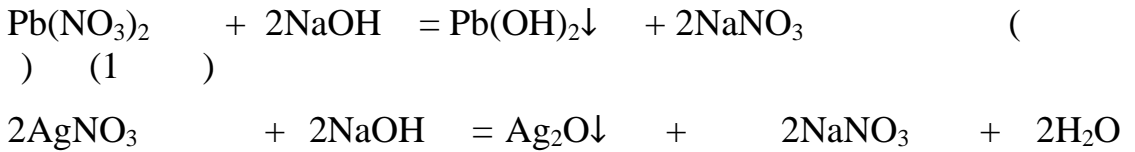
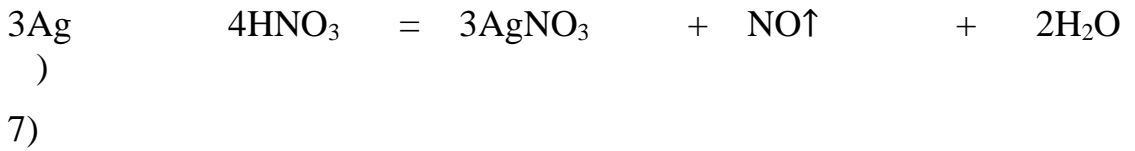
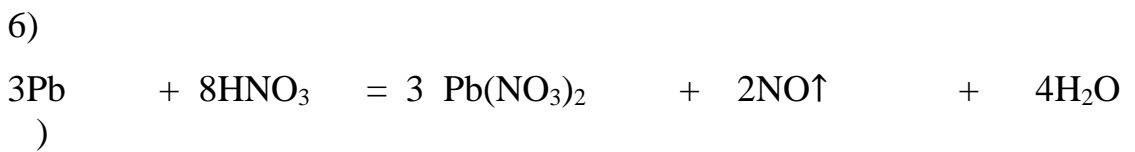
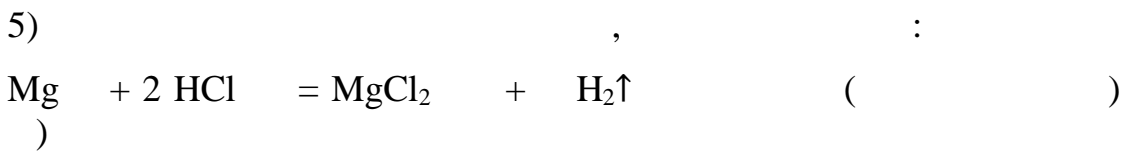
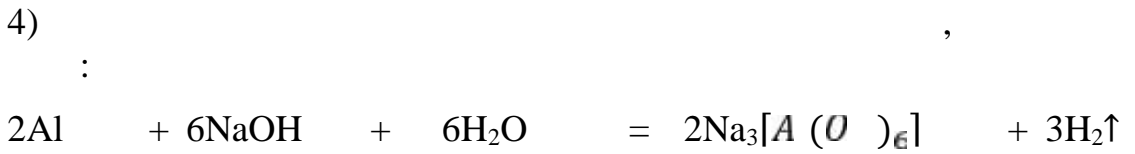
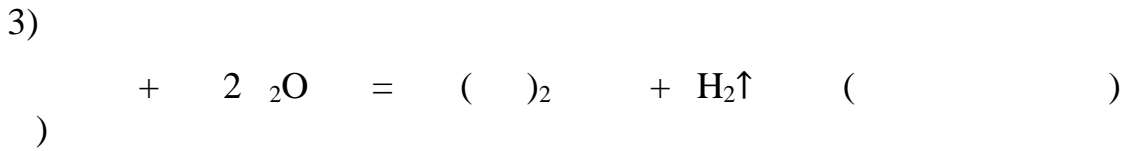
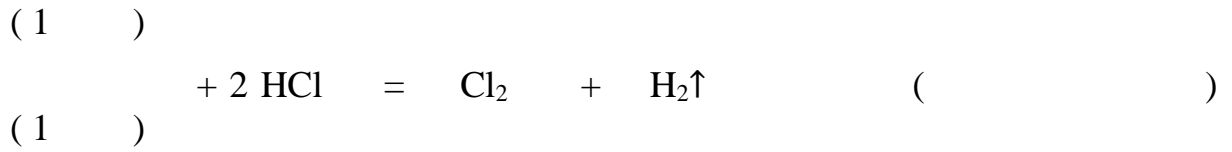
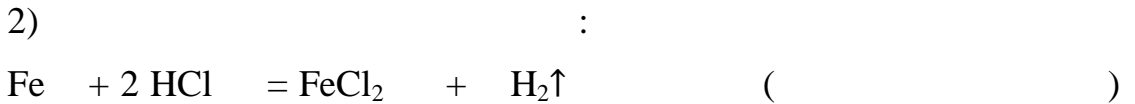
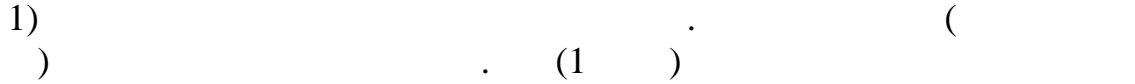
9-1.

1 : — 1  
 — 4  
 2 : O-F — 5  
 3 : « » — 1  
 10

9-2

, , , , , : , , , , , , . , , ,

9-2.



9-2.

1) -1

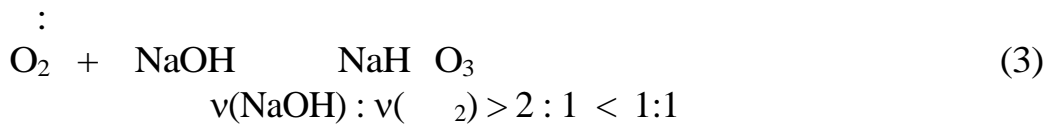
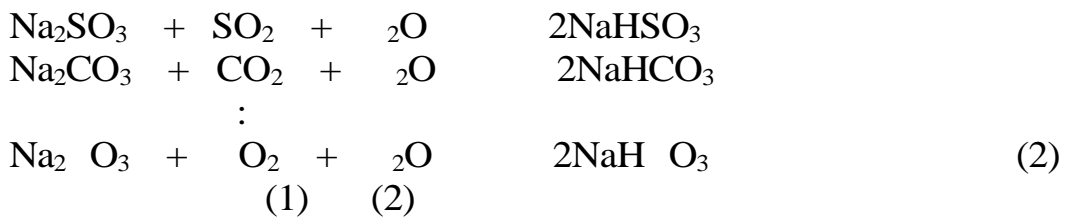
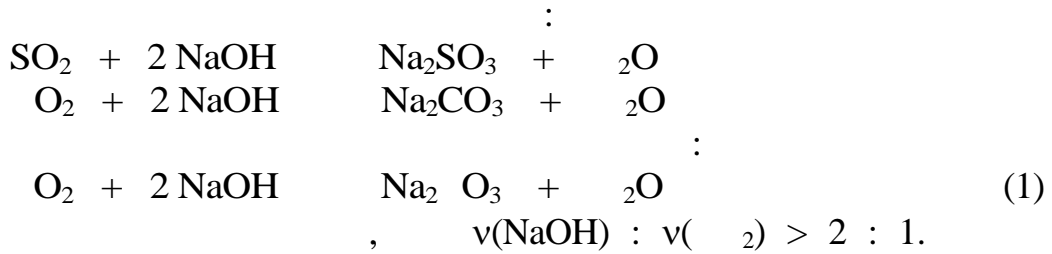
$$: 1) - 9) = 9$$

10

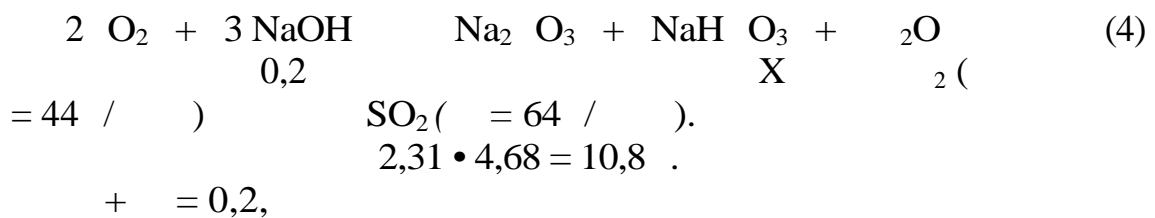
**9-3**

(IV) 19 ° , (IV) 4,68  
 2,31 / ( 778 . )  
 / , 2%). 571,5 ( 1,05  
 , . (IX— )

**9-3.**



$571,5 \cdot 1,05 = 600$  ,  
 $600 \cdot 0,02 = 12$  ,  $12/40 = 0,3$  .  
 $778$  .  $\therefore V = (22,4 \cdot 292 \cdot 760)/(273 \cdot 778) = 23,4$  .  
 $4,68/23,4 = 0,2$  .  
 $0,3 : 0,2 = 1,5:1$  .  $v(\text{NaOH}) : v(\text{O}_2) =$

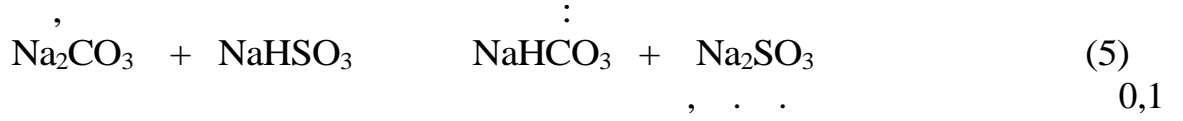


$$44 + 64 = 10,8$$

$$X = 0,1 \quad (4)$$

(1:1)

NaHSO<sub>3</sub>, Na<sub>2</sub>CO<sub>3</sub>, NaHCO<sub>3</sub>, : Na<sub>2</sub>SO<sub>3</sub>,



, 8,4 NaHCO<sub>3</sub> 0,1 , 12,6 Na<sub>2</sub>SO<sub>3</sub>.

$$600 + 10,8 = 610,8$$

$$\omega(\text{NaHCO}_3) = 8,4/610,8 = 0,014;$$

$$\omega(\text{Na}_2\text{S}_3) = 0,021, \quad 2,1\%$$

**9-3.**

1 : — 2 —  
 2 : — 1 —  
 3 : 2 SO<sub>2</sub> — 3 —  
 4 : NaHCO<sub>3</sub> — 2 —  
 Na<sub>2</sub>SO<sub>3</sub> — 3 —  
 10

**9-4**

1:1,78

( 94,1 .% )

1. , ,
  2. , ?
  3. ,
  4. ? ,
- ); ;  
 ); ;  
 ); ;

) ?

**9-4.**

(94,1 .% ) - ,

1. n, n:1 = (5,9:1):(94,1: ),  
 /n = 16. n=2, - H<sub>2</sub>S.  
 - 2S<sub>n</sub>.  
 32n/2M = 1,78, M/n = 9 - (Be, Sc,  
 Cu, Ge - ). - Al, - Al<sub>2</sub>S<sub>3</sub>.  
 Al<sub>2</sub>S<sub>3</sub> + 6HCl → 2AlCl<sub>3</sub> + 3H<sub>2</sub>S .

2. ,

Al<sub>2</sub>S<sub>3</sub> + 6H<sub>2</sub>O → 2Al(OH)<sub>3</sub> + 3H<sub>2</sub>S .

3. , . . . ;

4. ) Al<sub>2</sub>S<sub>3</sub> + 8NaOH → 2Na[Al(OH)<sub>4</sub>] + 3Na<sub>2</sub>S;  
 ) Al<sub>2</sub>S<sub>3</sub> + 24HNO<sub>3</sub> → Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub> + 24NO<sub>2</sub> + 12H<sub>2</sub>O;  
 ) Al<sub>2</sub>S<sub>3</sub> + 12Cl<sub>2</sub> + 12H<sub>2</sub>O → Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub> + 24HCl;  
 ) Al<sub>2</sub>S<sub>3</sub> + 3I<sub>2</sub> → 2AlI<sub>3</sub> + 3S .

**9-4.**

1	:	H	Al	H <sub>2</sub> S	Al <sub>2</sub> S <sub>3</sub>	— 3
2	:			— 1		—
3	:	3	4			— 6 — 1

**10**

**9-5**

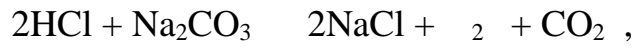
( 1 / ), —  
 —  
 100 .  
 100 ( )  
 1 / ),

?

**9-5.**

1:1.

:



$\text{Na}_2\text{CO}_3$

) 200 ,

(  
 $\frac{\text{Na}_2\text{CO}_3}{200} \cdot \text{HCl}$

2.  
 $\text{HCl}$  :  $n(\text{HCl}) = 1 \left( \frac{\quad}{\quad} \right) \cdot 0,1 \left( \quad \right) =$   
 $0,1$  .  
 $n(\text{CO}_2) = 0,1/2 = 0,05$  ,  $m(\text{CO}_2) = 0,05 \cdot 44 = 2,2$  .

(  
 ) .  
 2,2 .

**9-5.**

1	:		—	1	—
2	:	1		— 2	
3	:	$\text{CO}_2$		— 2	
4	:	2		— 4	
				<b>10</b>	