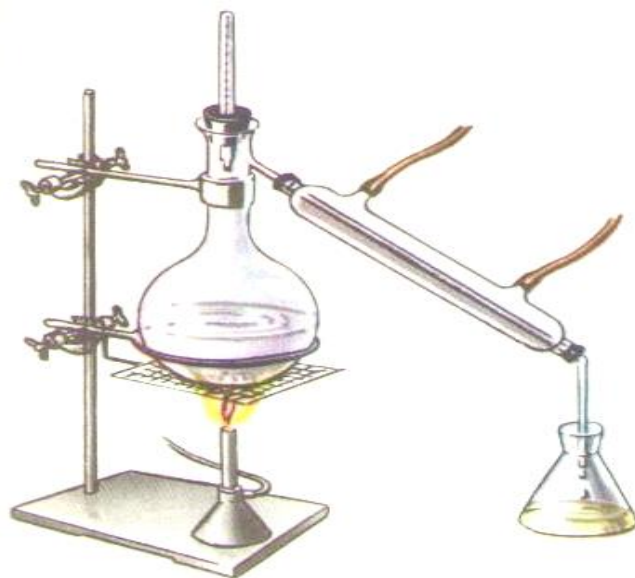


KIMYO

BOSHLANG'ICH TUSHUNCHA

0-QISM



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Nobel REPETITORLIK O'QUV MARKAZI-2019

Oksidlarning nisbiy molekulyar massasi va atomlar sonini toppish

№	Oksid nomi	Yozilishi	Molekulyar massa (Mr)	Atomlar soni
1.	O'zgarmas valentli element oksidlari Vodorod oksidi	H_2O	18	3
2.	Litiy oksidi			
3.	Natriy oksidi			
4.	Kaliy oksidi			
5.	Rubidiy oksidi			
6.	Seziy oksidi			
7.	Kumush oksidi			
8.	Fransiy oksidi			
9.	Magniy oksidi	MgO	40	2
10.	Berilliy oksidi			
11.	Kalsiy oksidi			
12.	Rux oksidi			
13.	Kadmiy oksidi			
14.	Stronsiy oksidi			
15.	Bariy oksidi			
16.	Bor oksidi	B_2O_3	70	5
17.	Aluminiy oksidi			
18.	O'zgaruvchan valentli element oksidlari			
19.	Mis (I) oksidi	Cu_2O	144	3
20.	Mis (II) oksidi			
21.	Oltin (I) oksidi			
22.	Oltin (III) oksidi			
23.	Simob (I) oksidi			
24.	Simob (II) oksidi			
25.	Uglerod (II) oksidi			
26.	Uglerod (IV) oksidi			
27.	Kremniy (II) oksidi			
28.	Kremniy (IV) oksidi			
29.	Qalay (II) oksidi			
30.	Qalay (IV) oksidi	SnO_2	151	3
31.	Qo'rg'oshin (II) oksidi			
32.	Qo'rg'oshin (IV) oksidi			
33.	Azot (I) oksidi			
34.	Azot (II) oksidi			
35.	Azot (III) oksidi			
36.	Azot (IV) oksidi			
37.	Azot (V) oksidi	N_2O_5	108	7
38.	Posfor (III) oksidi			
39.	Posfor (V) oksidi			
40.	Oltinugurt (II) oksidi			
41.	Oltinugurt (IV) oksidi			
42.	Oltinugurt (VI) oksidi			
43.	Xrom (II) oksidi			
44.	Xrom (III) oksidi			
45.	Xrom (VI) oksidi	CrO_3	100	4
46.	Xlor (I) oksidi			

№	Oksid nomi	Yozilishi	Molekulyar massa (Mr)	Atomlar soni
47.	Xlor (III) oksidi			
48.	Xlor (V) oksidi			
49.	Xlor (VII) oksidi			
50.	Brom (I) oksidi			
51.	Brom (III) oksidi			
52.	Brom (V) oksidi			
53.	Brom (VII) oksidi			
54.	Temir (II) oksidi			
55.	Temir (III) oksidi			
56.	Marganets (II) oksidi			
57.	Marganets (III) oksidi			
58.	Marganets (IV) oksidi			
59.	Marganets (VI) oksidi			
60.	Marganets (VII) oksidi			

Asoslarning nisbiy molekulyar massasi va atomlar sonini topish

№	Asoslar nomi	Yozilishi	Molekulyar massa (Mr)	Atomlar soni
1.	O'zgarmas valentli element asoslari			
2.	Litiy gidroksid	LiOH	24	3
3.	Natriy gidroksid			
4.	Kaliy gidroksid			
5.	Rubidiy gidroksid			
6.	Seziy gidroksid			
7.	Kumush gidroksid			
8.	Magniy gidroksid	Mg(OH) ₂	58	5
9.	Berilliy gidroksid			
10.	Kalsiy gidroksid			
11.	Rux gidroksid			
12.	Kadmiy gidroksid			
13.	Stronsiy gidroksid			
14.	Bariy gidroksid			
15.	Aluminiy gidroksid			

O'rta tuzlarning nisbiy molekulyar massasi va bog'lar sonini topish

№	Tuzlarning nomi	Yozilishi	Molekulyar massa (Mr)	Bog'lar soni σ - va π - bog'lar
1.	I valentli metallarning o'rta tuzlari			
2.	Litiy xlorid	LiCl	42,5	1- σ
3.	Litiy sulfid			
4.	Natriy sulfid			

№	Tuzlarning nomi	Yozilishi	Molekulyar massa (Mr)	Bog'lar soni σ - va π - bog'lar
5.	Natriy xlorid			
6.	Natriy gipoxlorid			
7.	Kaliy gipoxlorid			
8.	Natriy xlorit			
9.	Kaliy xlorit			
10.	Litiy xlorat			
11.	Natriy xlorat			
12.	Kumush sulfid			
13.	Litiy perxlorat			
14.	Natriy sulfit			
15.	Kaliy sulfat			
16.	Natriy nitrat			
17.	Litiy nitrit			
18.	Litiy tiosulfat			
19.	Litiy persulfat			
20.	Natriy tiosulfat	$\text{Na}_2\text{S}_2\text{O}_3$	158	6- σ , 2- π
21.	Natriy pirosulfat			
22.	Natriy persulfat	$\text{Na}_2\text{S}_2\text{O}_8$	238	11- σ , 4- π
23.	Kaliy sianid			
24.	Natriy ftarid			
25.	Kaliy xromat			
26.	Litiy dixromat			
27.	Natriy xromat			
28.	Kumush dixromat			
29.	Litiy manganat			
30.	Natriy manganat			
31.	Kaliy permanganat			
32.	Natriy permanganat			
33.	Litiy metafosfit			
34.	Litiy metafosfat			
35.	Litiy fosfit			
36.	Natriy fosfit			
37.	Natriy fosfat			
38.	Natriy metafosfit			
39.	Kaliy metafosfat			
40.	Natriy gipofosfit			
41.	Kaliy gipofosfit			
42.	Litiy pirofosfat			
43.	Natriy pirofosfat			
44.	Kumush fosfat			
45.	Litiy silikat			
46.	Natriy silikat			
47.	Kaliy metaaluminat			
48.	Natriy aluminat			
49.	Natriy karbonat			
50.	Natriy borat			
51.	Natriy metaborat			
52.	II valentli metallarning o'rta tuzlari			
53.	Kalsiy xlorid			

№	Tuzlarning nomi	Yozilishi	Molekulyar massa (Mr)	Bog'lar soni σ - va π - bog'lar
54.	Magniy xlorit			
55.	Kalsiy xlorit			
56.	Rux xlorat			
57.	Bariy xlorat			
58.	Rux sulfid			
59.	Kalsiy perxlorat			
60.	Kalsiy sulfit			
61.	Kadmiy sulfat			
62.	Bariy nitrat			
63.	Kalsiy nitrit			
64.	Rux sulfid			
65.	Magniy xlorid			
66.	Kalsiy gipoxlorid			
67.	Bariy gipoxlorid			
68.	Magniy tiosulfat			
69.	Kalsiy persulfat			
70.	Bariy tiosulfat			
71.	Rux pirosulfat			
72.	Magniy persulfat			
73.	Kalsiy sianid			
74.	Bariy ftarid			
75.	Rux xromat			
76.	Magniy dixromat			
77.	Kalsiy xromat			
78.	Bariy dixromat			
79.	Magniy manganat			
80.	Kalsiy manganat			
81.	Rux permanganat			
82.	Bariy permanganat			
83.	Kalsiy metafosfit			
84.	Magniy metafosfat			
85.	Rux fosfit	$ZnHPO_3$	145	6- σ , 1- π
86.	Bariy fosfit			
87.	Kalsiy fosfat			
88.	Magniy metafosfit			
89.	Rux metafosfat			
90.	Bariy gipofosfit	$Ba(H_2PO_2)_2$	267	10- σ , 2- π
91.	Kalsiy gipofosfit			
92.	Magniy pirofosfat			
93.	Rux pirofosfat			
94.	Bariy fosfat			
95.	Kalsiy silikat			
96.	Magniy silikat			
97.	Rux metaaluminat			
98.	Bariy aluminat			
99.	Kalsiy karbonat			
100.	Magniy borat			
101.	Rux metaborat			
102.				
103.				

№	Tuzlarning nomi	Yozilishi	Molekulyar massa (Mr)	Bog'lar soni σ - va π - bog'lar
104.	III valentli metallarning o'rta tuzlari			
105.	Aluminiy xlorid			
106.	Aluminiy xlorit			
107.	Aluminiy xlorat			
108.	Aluminiy sulfid			
109.	Aluminiy perxlorat			
110.	Aluminiy sulfit			
111.	Aluminiy sulfat			
112.	Aluminiy nitrat			
113.	Aluminiy nitrit			
114.	Aluminiy sulfid			
115.	Aluminiy gipoxlorid			
116.	Aluminiy persulfat			
117.	Aluminiy tiosulfat			
118.	Aluminiy pirosulfat			
119.	Aluminiy persulfat			
120.	Aluminiy sianid			
121.	Aluminiy ftarid			
122.	Aluminiy xromat			
123.	Aluminiy dixromat			
124.	Aluminiy xromat			
125.	Aluminiy manganat			
126.	Aluminiy permanganat			
127.	Aluminiy metafosfit			
128.	Aluminiy metafosfat			
129.	Aluminiy fosfit	$Al_2(HPO_3)_3$	294	18- σ , 3- π
130.	Aluminiy fosfat			
131.	Aluminiy gipofosfit	$Al(H_2PO_2)_3$	222	15- σ , 3- π
132.	Aluminiy pirofosfat			
133.	Aluminiy silikat			
134.	Aluminiy karbonat			
135.	Aluminiy borat			
136.	Aluminiy metaborat			
137.	O'zgaruvchan valentli metallarning o'rta tuzlari			
138.	Temir (II) xlorid			
139.	Temir (II) xromat			
140.	Mis (II) dixromat			
141.	Temir (III) xromat			
142.	Mis(II) sulfat			
143.	Marganets (II) sulfat			
144.	Qo'rg'oshin (II) sulfid			
145.	Mis (II) nitrat			
146.	Temir (II) fosfat			
147.	Mis (II) karbonat			
148.	Simob (II) sulfid			
149.	Temir (III) silikat			

Nordon tuzlarning nisbiy molekulyar massasi va bog'lar sonini topish

№	Tuzlarning nomi	Yozilishi	Molekulyar massa (Mr)	Bog'lar soni σ - va π - bog'lar
1.	I valentli metallarning nordon tuzlari			
2.	Natriy gidrosulfid			
3.	Natriy gidrosulfit			
4.	Kaliy gidrosulfat			
5.	Litiy gidrotiosulfat			
6.	Litiy gidropersulfat			
7.	Natriy gidrotiosulfat			
8.	Natriy gidropirosulfat			
9.	Natriy gidropersulfat			
10.	Kaliy gidroxromat			
11.	Litiy gidrodixromat			
12.	Natriy gidroxromat			
13.	Kumush gidrodixromat			
14.	Litiy gidromanganat			
15.	Natriy gidromanganat			
16.	Litiy gidrofosfit	LiH₂PO₃	88	6- σ, 1- π
17.	Natriy gidrofosfit			
18.	Natriy gidrofosfat			
19.	Natriy digidrofosfat			
20.	Litiy gidropirofosfat			
21.	Natriy digidropirofosfat			
22.	Kumush gidrofosfat			
23.	Kumush digidrofosfat			
24.	Litiy gidrosilikat			
25.	Natriy gidrosilikat			
26.	Natriy gidroaluminat			
27.	Natriy digidroaluminat			
28.	Natriy gidrokarbonat			
29.	Natriy gidroborat			
30.	Natriy digidroborat			
31.	II valentli metallarning nordon tuzlari			
32.	Rux gidrosulfid			
33.	Kalsiy gidrosulfit			
34.	Kadmiy gidrosulfat			
35.	Kalsiy gidrosulfid			
36.	Magniy gidrotiosulfat			
37.	Kalsiy gidropersulfat			
38.	Bariy gidrotiosulfat			
39.	Rux gidropirosulfat			
40.	Magniy gidropersulfat			
41.	Rux gidroxromat			
42.	Magniy gidrodixromat			
43.	Kalsiy gidroxromat			
44.	Bariy gidrodixromat			
45.	Magniy gidromanganat			

№	Tuzlarning nomi	Yozilishi	Molekulyar massa (Mr)	Bog'lar soni σ - va π - bog'lar
46.	Kalsiy gidromanganat			
47.	Rux gidrofosfit	$Zn(H_2PO_3)_2$	227	12- σ , 2- π
48.	Bariy gidrofosfit			
49.	Kalsiy gidrofosfat			
50.	Kalsiy digidrofosfat			
51.	Magniy digidrofosfat			
52.	Magniy gidropirofosfat			
53.	Rux digidropirofosfat			
54.	Kalsiy digidropirofosfat			
55.	Bariy gidrofosfat			
56.	Bariy digidrofosfat			
57.	Magniy digidrofosfat			
58.	Kalsiy gidrosilikat			
59.	Magniy gidrosilikat			
60.	Bariy gidroaluminat			
61.	Bariy digidroaluminat			
62.	Kalsiy gidrokarbonat			
63.	Magniy gidroborat			
64.	Rux digidroborat			
65.	III valentli metallarning nordon tuzlari			
66.	Aluminiy gidrosulfit			
67.	Aluminiy gidrosulfat			
68.	Aluminiy gidrosulfid			
69.	Aluminiy gidropersulfat			
70.	Aluminiy gidrotiosulfat			
71.	Aluminiy gidropirosulfat			
72.	Aluminiy gidropersulfat			
73.	Aluminiy gidroxromat			
74.	Aluminiy gidrodixromat			
75.	Aluminiy gidroxromat			
76.	Aluminiy gidromanganat			
77.	Aluminiy gidrofosfit	$Al(H_2PO_3)_3$	270	18- σ , 3- π
78.	Aluminiy gidrofosfat			
79.	Aluminiy digidrofosfat			
80.	Aluminiy digidropirofosfat			
81.	Aluminiy gidropirofosfat			
82.	Aluminiy gidrosilikat			
83.	Aluminiy gidroaluminat			
84.	Aluminiy digidroaluminat			
85.	Aluminiy gidrokarbonat			
86.	Aluminiy gidroborat			
87.	Aluminiy digidroborat			
88.	O'zgaruvchan valentli metallarning nordon tuzlari			
89.	Temir (II) gidroxromat			
90.	Mis (II) gidrodixromat			
91.	Mis(II) gidrosulfat			
92.	Marganets (II) gidrosulfat			
93.	Qo'rg'oshin (II) gidrosulfid			

№	Tuzlarning nomi	Yozilishi	Molekulyar massa (Mr)	Bog'lar soni σ - va π - bog'lar
94.	Temir (II) gidrofosfat			
95.	Temir (III) gidrofosfat			
96.	Temir (II) digidrofosfat			
97.	Temir (III) digidrofosfat			
98.	Mis (II) gidrokarbonat			
99.	Simob (II) gidrosulfid			
100.	Temir (III) gidrosilikat			

Asosli tuzlarning nisbiy molekulyar massasi va bog'lar sonini topish

№	Tuzlarning nomi	Yozilishi	Molekulyar massa (Mr)	Bog'lar soni σ - va π - bog'lar
1.	I valentli metallarning asosli tuzlari			
2.	Kalsiy gidroksoxlorid			
3.	Magniy gidroksoxlorit			
4.	Kalsiy gidroksoxlorit			
5.	Rux gidroksoxlorat			
6.	Bariy gidroksoxlorat			
7.	Rux gidroksosulfid			
8.	Kalsiy gidroksoperxlorat			
9.	Kalsiy gidroksosulfit			
10.	Kadmiy gidroksosulfat			
11.	Bariy gidroksonitrat			
12.	Kalsiy gidroksonitrit			
13.	Rux gidroksosulfid			
14.	Mgny gidroksoxlorid			
15.	Kalsiy gidroksogipoxlorid			
16.	Bariy gidroksogipoxlorid			
17.	Magniy gidroksotiosulfat			
18.	Kalsiy gidroksopersulfat			
19.	Bariy gidroksotiosulfat			
20.	Rux gidroksopirosulfat			
21.	Magniy gidroksopersulfat			
22.	Kalsiy gidroksosianid			
23.	Bariy gidroksoftarid			
24.	Rux gidroksoxromat			
25.	Magniy gidroksodixromat			
26.	Kalsiy gidroksoxromat			
27.	Bariy gidroksodixromat			
28.	Magniy gidroksomanganat			
29.	Kalsiy gidroksomanganat			
30.	Rux gidroksopermanganat			
31.	Bariy gidroksopermanganat			
32.	Kalsiy gidroksometafosfit			
33.	Magniy gidroksometafosfat			

№	Tuzlarning nomi	Yozilishi	Molekulyar massa (Mr)	Bog'lar soni σ - va π - bog'lar
34.	Rux gidroksofosfit			
35.	Bariy gidroksofosfit			
36.	Kalsiy gidroksofosfat			
37.	Magniy gidroksometafosfit			
38.	Rux gidroksometafosfat			
39.	Bariy gidroksogipofosfit			
40.	Kalsiy gidroksogipofosfit			
41.	Magniy gidroksopirofosfat			
42.	Rux gidroksopirofosfat			
43.	Bariy gidroksofosfat			
44.	Kalsiy gidroksosilikat			
45.	Magniy gidroksosilikat			
46.	Rux gidroksometaaluminat			
47.	Bariy gidroksoaluminat			
48.	Kalsiy gidroksokarbonat			
49.	Magniy gidroksoborat			
50.	Rux gidroksometaborat			
51.	III valentli metallarning asosli tuzlari			
52.	Aluminiy gidroksoxlorid			
53.	Aluminiy digidroksoxlorid			
54.	Aluminiy gidroksoxlorit			
55.	Aluminiy digidroksoxlorit			
56.	Aluminiy gidroksoxlorat			
57.	Aluminiy digidroksoxlorat			
58.	Aluminiy gidroksosulfid			
59.	Aluminiy digidroksoosulfid			
60.	Aluminiy gidroksoperxlorat			
61.	Aluminiy digidroksooperxlorat			
62.	Aluminiy gidroksosulfit			
63.	Aluminiy digidroksoosulfit			
64.	Aluminiy gidroksosulfat			
65.	Aluminiy digidroksoosulfat			
66.	Aluminiy gidroksonitrat			
67.	Aluminiy digidroksonitrat			
68.	Aluminiy gidroksonitrit			
69.	Aluminiy digidroksonitrit			
70.	Aluminiy gidroksogipoxlorid			
71.	Aluminiy digidroksoogipoxlorid			
72.	Aluminiy gidroksopersulfat			
73.	Aluminiy digidroksoopersulfat			
74.	Aluminiy gidroksotiosulfat			
75.	Aluminiy digidroksootiosulfat			
76.	Aluminiy gidroksopirosulfat			
77.	Aluminiy digidroksopirosulfat			
78.	Aluminiy gidrososianid			
79.	Aluminiy digidroksoosianid			
80.	Aluminiy gidroksoftarid			
81.	Aluminiy digidroksoftarid			
82.	Aluminiy gidroksoxromat			

№	Tuzlarning nomi	Yozilishi	Molekulyar massa (Mr)	Bog'lar soni σ - va π - bog'lar
83.	Aluminiy digidroksoxromat			
84.	Aluminiy gidroksodixromat			
85.	Aluminiy digidroksodixromat			
86.	Aluminiy gidroksomanganat			
87.	Aluminiy digidroksomanganat			
88.	Aluminiy gidroksopermanganat			
89.	Aluminiy digidroksopermanganat			
90.	Aluminiy gidroksometafosfit			
91.	Aluminiy digidroksometafosfat			
92.	Aluminiy gidroksofosfit			
93.	Aluminiy digidroksofosfit			
94.	Aluminiy gidroksofosfat			
95.	Aluminiy digidroksofosfat			
96.	Aluminiy gidroksogipofosfit			
97.	Aluminiy digidroksogipofosfit			
98.	Aluminiy gidroksopirofosfat			
99.	Aluminiy digidroksopirofosfat			
100.	Aluminiy gidroksosilikat			
101.	Aluminiy digidroksosilikat			
102.	Aluminiy gidroksometaaluminat			
103.	Aluminiy digidroksometaaluminat			
104.	Aluminiy gidroksoaluminat			
105.	Aluminiy digidroksoaluminat			
106.	Aluminiy gidroksokarbonat			
107.	Aluminiy digidroksoarbonat			
108.	Aluminiy gidroksoborat			
109.	O'zgaruvchan valentli metallarning asosli tuzlari			
110.	Temir (II) gidroksoxlorid			
111.	Temir (II) gidroksoxromat			
112.	Mis (II) gidroksodixromat			
113.	Temir (III) gidroksoxromat			
114.	Temir (III) digidroksoxromat			
115.	Mis(II) gidroksosulfat			
116.	Qo'rg'oshin (II) gidroksosulfid			
117.	Mis (II) gidroksonitrat			
118.	Temir (II) gidroksofosfat			
119.	Mis (II) gidroksokarbonat			
120.	Temir (III) gidroksosilikat			
121.	Temir (III) digidroksoilikat			

Abituriyentlarimiz diqqatiga Nobel repetitorlik o'quv markazimizga taklif qilamiz. Manzil Farg'ona viloyati Bog'dod tumani markazidagi 6-bog'cha yonginasida.

I-BOB.KIMYONING ASOSIY TUSHUNCHA VA QONUNLARI.**I.1. Modda miqdori.(mol)**

I. 1. 80 gr natriy gidroksid (NaOH) ni modda miqdor(mol)ni toping.

Yechish; 1-usul. 1) NaOH ni molekulyar massasini topamiz.

$$Mr_{\text{NaOH}}=23+16+1=40 \text{ gr}$$

$$2) \text{ Molni topish fo'rmulasiga qo'yamiz } n = \frac{m}{Mr} = \frac{80}{40} = 2 \text{ mol ni}$$

tashkil qiladi.

2-usul. 1) NaOH = 40 gr

$$40 \text{ gr} \text{ ————— } 1 \text{ mol} \quad 2) x = \frac{80 \cdot 1}{40} = 2 \text{ mol ekan}$$

$$80 \text{ gr} \text{ ————— } x = \quad 3) \text{ J:2 mol}$$

2. 10 gr vodarod (H₂) ni modda miqdorini toping.

A) 5 B) 7,5 C) 10 D) 15

3. 15 gr vodarod (H₂) ni modda miqdorini toping.

A) 5 **B) 7,5** C) 10 D) 15

4. 20 gr vodarod (H₂) ni modda miqdorini toping.

A) 5 B) 7,5 **C) 10** D) 15

5. 740 gr kalsiy gidroksid (Ca(OH)₂) ni molini hisoblab toping.

A) 5 B) 7,5 **C) 10** D) 15

6. 370 gr kalsiy gidroksid (Ca(OH)₂) ni molini hisoblab toping.

A) 5 B) 7,5 C) 10 D) 15

7. 444 gr kalsiy gidroksid (Ca(OH)₂) ni molini hisoblab toping.

A) 6 B) 0,5 C) 0,2 D) 0,15

8. 8,5 gr natriy nitrat (NaNO₃) ning modda miqdori (mol) ni hisoblang.

A) 6 **B) 0,1** C) 0,2 D) 0,15

9. 17 gr natriy nitrat (NaNO₃) ning modda miqdori (mol) ni hisoblang.

A) 6 B) 0,5 **C) 0,2** D) 0,15

10. 25,5 gr natriy nitrat (NaNO₃) ning modda miqdori (mol) ni hisoblang.

A) 6 **B) 0,3** C) 0,2 D) 0,15

11. 15 gr kalsiy karbonat (CaCO₃) ning modda miqdori (mol) ni hisoblang.

A) 6 B) 0,5 C) 0,2 **D) 0,15**

12. 16 gr kalsiy karbonat (CaCO₃) ning modda miqdori (mol) ni hisoblang.

A) 6 **B) 0,16** C) 0,2 D) 0,15

13. 5 gr kalsiy karbonat (CaCO₃) ning modda miqdori (mol) ni hisoblang.

- A) 6 B) 0,5 C) 0,2 **D) 0,05**
14. 16 gr sulfat angidrid (SO_3) ning modda miqdori (mol) ni hisoblang.
A) 6 B) 0,5 **C) 0,2** D) 0,15
15. 24 gr sulfat angidrid (SO_3) ning modda miqdori (mol) ni hisoblang.
A) 6 **B) 0,3** C) 0,2 D) 0,15
16. 32 gr sulfat angidrid (SO_3) ning modda miqdori (mol) ni hisoblang.
A) 6 B) 0,5 C) 0,2 **D) 0,4**
17. 9,8 gr mis(II)-gidroksid ($\text{Cu}(\text{OH})_2$) ni modda miqdori (mol) ni hisoblang.
A) 0,1 B) 0,5 C) 0,2 D) 0,15
18. 4,9 gr mis(II)-gidroksid ($\text{Cu}(\text{OH})_2$) ni modda miqdori (mol) ni hisoblang.
A) 6 B) 0,5 C) 0,2 **D) 0,05**
19. 19,6 gr mis(II)-gidroksid ($\text{Cu}(\text{OH})_2$) ni modda miqdori (mol) ni hisoblang.
A) 0,1 B) 0,5 **C) 0,2** D) 0,15
20. 3,9 gr benzol (C_6H_6) ning modda miqdorini (mol) hisoblang.
A) 0,05 B) 0,5 C) 0,2 D) 0,15
21. 4,68 gr benzol (C_6H_6) ning modda miqdorini (mol) hisoblang.
A) 0,05 **B) 0,06** C) 0,07 D) 5
22. 5,46 gr benzol (C_6H_6) ning modda miqdorini (mol) hisoblang.
A) 0,05 B) 0,5 **C) 0,07** D) 0,15
23. 490 gr ortofosfat (H_3PO_4) kislotaning modda miqdorini (mol) toping .
A) 0,05 B) 0,5 C) 0,2 **D) 5**
24. 490 gr ortofosfat (H_3PO_4) kislotaning modda miqdorini (mol) toping .
A) 0,05 **B) 5** C) 0,2 D) 0,15
25. 490 gr ortofosfat (H_3PO_4) kislotaning modda miqdorini (mol) toping .
A) 0,05 B) 0,5 C) 0,2 **D) 5**
26. 49 gr sulfat kislota (H_2SO_4) ni modda miqdor (mol) ni toping.
A) 0,05 **B) 0,5** C) 0,2 D) 0,15
27. 58,8 gr sulfat kislota (H_2SO_4) ni modda miqdor (mol) ni toping.
A) 0,6 B) 0,5 C) 0,2 D) 0,15
28. 68,6 gr sulfat kislota (H_2SO_4) ni modda miqdor (mol) ni toping.
A) 0,05 B) 0,5 **C) 0,7** D) 0,15

II. 29. 0,5 mol o'yuvchi natriy (NaOH) ni massasini gr toping.

Yechish; 1) NaOH=40 gr

$$2) m = Mr \cdot n = 40 \cdot 0,5 = 20 \text{ gr } \mathbf{J:20}$$

30. 3 mol natriy sulfat (Na_2SO_4) ni massasini gr toping.

A) **426** B) 284 C) 568 D) 14,9

31. 2 mol natriy sulfat (Na_2SO_4) ni massasini gr toping.

A) 426 **B) 284** C) 568 D) 14,9

32. 4 mol natriy sulfat (Na_2SO_4) ni massasini gr toping.

A) 426 B) 284 **C) 568** D) 14,9

33. 0,1 mol ammoniy fosfat ($(\text{NH}_4)_3\text{PO}_4$) ning massasini gr hisoblang.

A) 426 B) 284 C) 568 **D) 14,9**

34. 0,2 mol ammoniy fosfat ($(\text{NH}_4)_3\text{PO}_4$) ning massasini gr hisoblang.

A) **29,8** B) 44,7 C) 14 D) 16,8

35. 0,3 mol ammoniy fosfat ($(\text{NH}_4)_3\text{PO}_4$) ning massasini gr hisoblang.

A) 29,8 **B) 44,7** C) 14 D) 16,8

36. 0,25 mol kaliy gidroksid (KOH) ning massasini gr hisoblang.

A) 29,8 B) 44,7 **C) 14** D) 16,8

37. 0,3 mol kaliy gidroksid (KOH) ning massasini gr hisoblang.

A) 29,8 B) 44,7 C) 14 **D) 16,8**

38. 0,35 mol kaliy gidroksid (KOH) ning massasini gr hisoblang.

A) **19,6** B) 44,7 C) 14 D) 16,8

39. 3,5 mol mis kuporosi ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$) ning massasini gr hisoblang.

A) 490 B) 1125 C) 1000 **D) 875**

40. 4 mol mis kuporosi ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$) ning massasini gr hisoblang.

A) 490 B) 1125 **C) 1000** D) 875

41. 4,5 mol mis kuporosi ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$) ning massasini gr hisoblang.

A) 490 **B) 1125** C) 1000 D) 875

42. 5 mol sulfat kislota (H_2SO_4) ning massasini gr hisoblang.

A) **490** B) 1125 C) 1000 D) 875

43. 4 mol sulfat kislota (H_2SO_4) ning massasini gr hisoblang.

A) 180 **B) 392** C) 294 D) 240

44. 3 mol sulfat kislota (H_2SO_4) ning massasini gr hisoblang.

- A) 180 B) 392 C) **294** D) 240
45. 4 mol sirka kislota (CH_3COOH) necha gr keladi?
A) 180 B) 392 C) 294 D) **240**
46. 3 mol sirka kislota (CH_3COOH) necha gr keladi?
A) **180** B) 392 C) 294 D) 240
47. 2 mol sirka kislota (CH_3COOH) necha gr keladi?
A) 180 B) 392 C) 294 D) **120**
48. 6 mol anilin ($\text{C}_6\text{H}_5\text{NH}_2$) necha gr keladi?
A) 780 B) **558** C) 372 D) 1170
49. 5 mol anilin ($\text{C}_6\text{H}_5\text{NH}_2$) necha gr keladi?
A) 780 B) **465** C) 372 D) 1170
50. 4 mol anilin ($\text{C}_6\text{H}_5\text{NH}_2$) necha gr keladi?
A) 780 B) 465 C) **372** D) 1170
51. 15 mol natriy peroksid (Na_2O_2) necha gr keladi?
A) 780 B) 465 C) 372 D) **1170**
52. 10 mol natriy peroksid (Na_2O_2) necha gr keladi?
A) **780** B) 465 C) 372 D) 1170
53. 12 mol natriy peroksid (Na_2O_2) necha gr keladi?
A) 780 B) **936** C) 372 D) 1170
54. 3,5 mol natriy fosfat (Na_3PO_4) tuzi necha gr keladi?
A) **574** B) 410 C) 738 D) 56
55. 2,5 mol natriy fosfat (Na_3PO_4) tuzi necha gr keladi?
A) 574 B) **410** C) 738 D) 56
56. 4,5 mol natriy fosfat (Na_3PO_4) tuzi necha gr keladi?
A) 574 B) 410 C) **738** D) 56
57. 1,75 mol kislorod (O_2) necha gr keladi.
A) 574 B) 410 C) 738 D) **56**
58. 1,5 mol kislorod (O_2) necha gr keladi.
A) 574 B) 410 C) **48** D) 56
59. 1,6 mol kislorod (O_2) necha gr keladi.
A) 184,8 B) 224 C) 280 D) **51,2**

60. 3,3 mol so'ndirilmagan ohak (CaO) ning massasini gr toping.

- A) **184,8** B) 224 C) 280 D) 51,2

61. 4 mol so'ndirilmagan ohak (CaO) ning massasini gr toping.

- A) 184,8 B) **224** C) 280 D) 51,2

62. 5 mol so'ndirilmagan ohak (CaO) ning massasini gr toping.

- A) 184,8 B) 224 C) **280** D) 51,2

III. 63. 5,2 gr nomalum modda 0,2 mol kelsa, nomalum modda molekulyar massasini toping.

Yechish; 1-usul

1) quyidagi fo'rmula bo'yicha molekulyar massani topamiz.

$$M_r = \frac{m}{n} = \frac{5,2}{0,2} = 26 \text{ gr}$$

J:26

2-usul. 1)

$$\begin{array}{l} 5,2 \text{ gr} \text{ ————— } 0,2 \text{ mol} \\ =x \text{ ————— } 1 \text{ mol} \end{array} \quad \begin{array}{l} 2) x=26 \text{ ekan} \\ \\ \end{array}$$

3) J:26

64. 4,9 gr nomalum modda 0,05 mol kelsa, shu moddani M_r ni toping.

- A) **98** B) 63 C) 40 D) 78

65. 3,15 gr nomalum modda 0,05 mol kelsa, shu moddani M_r ni toping.

- A) 98 B) **63** C) 40 D) 78

66. 0,8 gr nomalum modda 0,02 mol kelsa, shu moddani M_r ni toping.

- A) 98 B) 63 C) **40** D) 78

67. 39 gr nomalum modda 0,5 mol kelsa, shu moddani massasini toping.

- A) 98 B) 63 C) 40 D) **78**

68. 28 gr nomalum modda 0,4 mol kelsa, shu moddani massasini toping.

- A) **70** B) 60 C) 56 D) 78

69. 18 gr nomalum modda 0,3 mol kelsa, shu moddani massasini toping.

- A) 70 B) **60** C) 56 D) 78

70. nomalum moddaning 0,25 moli 14 gr kelsa, shu moddaning M_r ni toping.

- A) 70 B) 60 C) **56** D) 78

73. 27,3 gr nomalum modda 0,35 mol bo'lsa, moddaning M_r ni toping.

- A) 70 B) 60 C) 56 D) **78**

73. 28 gr nomalum modda 0,35 mol bo'lsa, moddaning M_r ni toping.

- A) **80** B) 120 C) 112 D) 112

74. 0,3 mol moddani massasi 36 gr bo'lsa, shu moddani molekulyar massasini toping.
A) 30 **B) 120** C) 112 D) 28
75. 0,2 mol moddani massasi 22,4 gr bo'lsa, shu moddani molekulyar massasini toping.
A) 70 B) 60 **C) 112** D) 78
76. Berk idishga 14 gr yarim mol gaz berkitilgan. Shu idish ichidagi noma'lum gazning molekulyar massasini aniqlang.
A) 70 B) 60 C) 56 **D) 28**
77. Berk idishga 15 gr yarim mol gaz berkitilgan. Shu idish ichidagi noma'lum gazning molekulyar massasini aniqlang.
A) 30 B) 80 C) 86 D) 44
78. 36 gr nomalum moddani 0,45 molining molekulyar massasini toping.
A) 70 **B) 80** C) 56 D) 78
79. 21,5 gr nomalum moddani 0,25 molining molekulyar massasini toping.
A) 30 B) 80 **C) 86** D) 44
80. Berk idishga 22 gr yarim mol gaz berkitilgan. Shu idish ichidagi noma'lum gazni aniqlang.
A) 30 B) 80 C) 86 **D) 44**
81. Berk idishga 44 gr yarim mol gaz berkitilgan. Shu idish ichidagi noma'lum gazni aniqlang.
A) 47 B) 63 **C) 88** D) 44
82. 18,9 gr nomalum moddani miqdori 0,3 mol bo'lsa, shu moddani molekulyar massasini toping.
A) 47 **B) 63** C) 88 D) 44
83. 9,4 gr nomalum moddani miqdori 0,2 mol bo'lsa, shu moddani molekulyar massasini toping.
A) 47 B) 63 C) 88 D) 44

I.2. Molyar hajm.

I.1. 2 mol karbonat angidrid (CO_2) (n.sh) da qanday hajmni egallaydi.

Yechish; 1) har qanday gaz bir moli 22,4 l(n.sh) hajmni egallaydi. bunda

$$2) \begin{array}{l} 1 \text{ mol} \text{ ————— } 22,4 \text{ l} \\ 2 \text{ mol} \text{ ————— } x = \end{array} \quad x = \frac{2 \cdot 22,4}{1} = 44,8 \text{ l(n.sh) da hajmni egallaydi.}$$

$$x = \mathbf{J:44,8 \text{ l}}$$

2. 0,5 mol sulfat angidrid (SO_3) (n.sh) da qanday hajmni egallaydi?

- A) **11,2** B) 8,96 C) 5,6 D) 0,672

3. 0,4 mol sulfat anhidrid (SO_3) (n.sh) da qanday hajmni egallaydi?
A) 11,2 **B) 8,96** C) 5,6 D) 0,672
4. 0,25 mol is gazi (CO) (n.sh) da qanday hajmni egallaydi?
A) 11,2 B) 8,96 **C) 5,6** D) 0,672
5. 0,03 mol is gazi (CO) (n.sh) da qanday hajmni egallaydi?
A) 11,2 B) 8,96 C) 5,6 **D) 0,672**
6. 0,1 mol (NH_3) (n.sh) da qanday hajmni egallaydi?
A) 2,24 B) 2,688 C) 224 D) 336
7. 0,12 mol (NH_3) (n.sh) da qanday hajmni egallaydi?
A) 2,24 **B) 2,688** C) 224 D) 336
8. 10 mol sulfit anhidrid (SO_2) (n.sh) da qanday hajmni egallaydi?
A) 2,24 B) 2,688 **C) 224** D) 336
9. 15 mol sulfit anhidrid (SO_2) (n.sh) da qanday hajmni egallaydi?
A) 2,24 B) 2,688 C) 224 **D) 336**
10. 3 mol metan (CH_4) (n.sh) da qanday hajmni egallaydi?
A) 67,2 B) 44,8 C) 35,84 D) 31,36
11. 2 mol metan (CH_4) (n.sh) da qanday hajmni egallaydi?
A) 67,2 **B) 44,8** C) 35,84 D) 31,36
12. 1,6 mol vodorod bromid (HBr) (n.sh) da qanday hajmni egallaydi?
A) 67,2 B) 44,8 **C) 35,84** D) 31,36
13. 1,4 mol vodorod bromid (HBr) (n.sh) da qanday hajmni egallaydi?
A) 67,2 B) 44,8 C) 35,84 **D) 31,36**
14. 3 mol etilen (C_2H_4) (n.sh) da qanday hajmni egallaydi?
A) 67,2 B) 44,8 C) 35,84 D) 31,36
15. 5 mol etilen (C_2H_4) (n.sh) da qanday hajmni egallaydi?
A) 112 B) 201,6 C) 179,2 D) 6,72
16. 9 mol azot (N_2) (n.sh) da qanday hajmni egallaydi?
A) 112 **B) 201,6** C) 179,2 D) 6,72
17. 8 mol azot (N_2) (n.sh) da qanday hajmni egallaydi?
A) 112 B) 201,6 **C) 179,2** D) 6,72
18. 0,3 mol ozon (O_3) (n.sh) da qanday hajmni egallaydi?
A) 112 B) 201,6 C) 179,2 **D) 6,72**

19. 3,6 mol ozon (O_3) (n.sh) da qanday hajmni egallaydi?

- A) **80,64** B) 201,6 C) 179,2 D) 6,72

II.20. 56 l (n.sh) vodorod sulfid (H_2S) ni massasini gr toping.

Yechish; 1) H_2S (M_r) = 34 gr

2) 22,4 l (n.sh) da _____ 34 gr

56 l (n.sh) da _____ $x = \frac{56 \cdot 34}{22.4} = 85$ gr **J:85 gr**

21. Normal sharoitda 44,8 l azot(I)-oksid (N_2O) necha gr keladi?

- A) **88** B) 132 C) 14 D) 2,8

22. Normal sharoitda 67,2 l azot(I)-oksid (N_2O) necha gr keladi?

- A) 88 **B) 132** C) 14 D) 2,8

23. Normal sharoitda 11,2 l is gazi (CO) necha gr keladi?

- A) 88 B) 132 **C) 14** D) 2,8

24. Normal sharoitda 2,24 l is gazi (CO) necha gr keladi?

- A) 88 B) 132 C) 14 **D) 2,8**

25. Normal sharoitda 224 l ozon (O_3) necha gr keladi?

- A) **480** B) 720 C) 100 D) 20

26. Normal sharoitda 336 l ozon (O_3) necha gr keladi?

- A) 480 **B) 720** C) 100 D) 20

27. Normal sharoitda 560 l geliy (He) necha gr keladi?

- A) 480 B) 720 **C) 100** D) 20

28. Normal sharoitda 112 l geliy (He) necha gr keladi?

- A) 480 B) 720 C) 100 **D) 20**

29. Normal sharoitda 448 l argon (Ar) necha gr keladi?

- A) **800** B) 240 C) 0,26 D) 0,52

30. Normal sharoitda 134,4 l argon (Ar) necha gr keladi?

- A) 800 **B) 240** C) 0,26 D) 0,52

31. Normal sharoitda 224 ml atsetilen (C_2H_2) necha gr keladi?

- A) 800 B) 240 **C) 0,26** D) 0,52

32. Normal sharoitda 448 ml atsetilen (C_2H_2) necha gr keladi?

- A) 800 B) 240 C) 0,26 **D) 0,52**

33. Normal sharoitda 2800 ml etilen (C_2H_4) necha gr keladi?

- A) 32,4 B) 22,4 **C) 3,5** D) 7

34. Normal sharoitda 5600 ml etilen (C_2H_4) necha gr keladi?

- A) 12,4 B) 22,4 C) 3,5 **D) 7**

35. 15,68 l (n.sh) metanol (CH_3OH) massasini gr toping.

- A) 25,4 **B) 22,4** C) 3,5 D) 7

36. 15,68 l (n.sh) metanol (CH_3OH) massasini gr toping.

- A) **22,4** B) 22,6 C) 3,5 D) 7

37. 67,2 l (n.sh) etanning (C_2H_6) massasini toping.

- A) 22,4 **B) 90** C) 60 D) 70

38. 44,8 l (n.sh) etanning (C_2H_6) massasini toping.

- A) 22,4 B) 90 **C) 60** D) 70

III. 39. 2.24 m^3 (n.sh) H_2 ning massasini (kg) toping.

Yechish; 1) 1 m^3 gaz ————— 1000 l degani

$2,24 \text{ m}^3$ ————— $x=2240$ l degani.

2) 22,4 l (n.sh) da ————— 2 gr H_2

2240 l (n/sh) da ————— $x=$

$$x = \frac{2 \cdot 2240}{22.4} = 200 \text{ gr } H_2$$

3) 1000 gr ————— 1kg degani

$$200 \text{ gr} \text{ ————— } x = \quad x = \frac{1 \cdot 200}{1000} = 0,2 \text{ kg. } \text{ J: } 0,2 \text{ kg.}$$

40. $6,72 \text{ m}^3$ (n.sh) metan (CH_4) ning massasini gr toping.

- A) **4800** B) 3200 C) 28,5 D) 57

41. $1,12 \text{ m}^3$ (n.sh) metan (CH_4) ning massasini gr toping.

- A) **800** B) 3200 C) 28,5 D) 57

42. $2,24 \text{ m}^3$ (n.sh) metan (CH_4) ning massasini gr toping.

- A) 4800 **B) 1600** C) 28,5 D) 57

43. 56 kg karbonat anhidrid (CO_2) ni hajmini m^3 (n.sh) da hisiblang.

- A) 4800 B) 3200 **C) 28,5** D) 57

44. 112 kg karbonat anhidrid (CO_2) ni hajmini m^3 (n.sh) da hisiblang.

- A) 4800 B) 3200 C) 28,5 **D) 57**

45. 28 kg karbonat anhidrid (CO_2) ni hajmini m^3 (n.sh) da hisiblang.

- A) **14,25** B) 28 C) 42 D) 20

46. n.sh da nomalum gazning 1 l massasi 1,25 gr/l kelsa, shu gazning molekulyar massasini toping.

- A) 4800 B) 3200 **C) 28** D) 57

59. 224 l (n.sh) azot(I)-oksid (N_2O) ning modda miqdorini (mol) hisoblang.
A) 0,75 B) 1,2 **C) 10** D) 2,4
60. 336 l (n.sh) azot(I)-oksid (N_2O) ning modda miqdorini (mol) hisoblang.
A) 0,75 **B) 15** C) 10 D) 2,4
61. 112 l (n.sh) azot(IV)-oksid (NO_2) ning modda miqdorini (mol) hisoblang.
A) 0,75 B) 1,2 C) 10 **D) 5**
62. 89,6 l (n.sh) azot(IV)-oksid (NO_2) ning modda miqdorini (mol) hisoblang.
A) 4 B) 1,2 C) 10 D) 2,4
63. 44,8 l (n.sh) da neon (Ne) ning modda miqdorini toping.
A) 0,75 **B) 2** C) 10 D) 2,4
64. 4,48 l (n.sh) da neon (Ne) ning modda miqdorini toping.
A) 0,75 B) 1,2 C) 10 **D) 0,2**
65. 134,4 l (n.sh) silan(CH_4) ning molini toping.
A) 6 B) 1,2 C) 10 D) 2,4
66. 67,2 l (n.sh) silan(CH_4) ning molini toping.
A) 0,75 B) 1,2 C) 10 **D) 3**
- V. 67. N.sh.da o'lchangan 6 gr etan (C_2H_6) ning hajmini (l) hisoblang.
Yechish; 1) 30 gr etan ————— 22,4 l (n.sh) da hajmini egallaydi
6 gr da ————— x= $x = \frac{6 \cdot 22,4}{30} = 4,48$ l. **J:4,48**
68. 3 gr azot(II)-oksid (NO) ning normal sharoitdagi hajmini (l) hisoblang.
A) 2,24 B) 4,48 C) 565 D) 8,96
69. 6 gr azot(II)-oksid (NO) ning normal sharoitdagi hajmini (l) hisoblang.
A) 2,24 **B) 4,48** C) 565 D) 8,96
70. 1110 gr azot(I)-oksid (N_2O) ning normal sharoitdagi hajmini (l) hisoblang.
A) 2,24 B) 4,48 **C) 565** D) 8,96
71. 12 gr azot(II)-oksid (NO) ning normal sharoitdagi hajmini (l) hisoblang.
A) 2,24 B) 4,48 C) 565 **D) 8,96**
72. 555 gr azot(I)-oksid (N_2O) ning normal sharoitdagi hajmini (l) hisoblang.
A) 282,5 B) 4,48 C) 565 D) 8,96
73. 440 gr azot(I)-oksid (N_2O) ning normal sharoitdagi hajmini (l) hisoblang.
A) 224 B) 4,48 C) 565 D) 8,96

74. 9,2 gr azot(IV)-oksid (NO_2) ning (n.sh) dagi hajmini (l) hisoblang.
A) 2,24 **B) 4,48** C) 565 D) 8,96
75. 6,9 gr azot(IV)-oksid (NO_2) ning (n.sh) dagi hajmini (l) hisoblang.
A) 2,24 B) 4,48 C) 565 **D) 3,36**
76. 220 gr karbonat anhidrid (CO_2) ning normal sharoitdagi hajmini (l) hisoblang.
A) 2,24 B) 4,48 **C) 112** D) 8,96
77. 2,3 gr azot(IV)-oksid (NO_2) ning (n.sh) dagi hajmini (l) hisoblang.
A) 2,24 **B) 1,12** C) 565 D) 8,96
78. 110 gr karbonat anhidrid (CO_2) ning normal sharoitdagi hajmini (l) hisoblang.
A) 2,24 B) 4,48 **C) 56** D) 8,96
79. 55 gr karbonat anhidrid (CO_2) ning normal sharoitdagi hajmini (l) hisoblang.
A) 2,24 B) 4,48 C) 565 **D) 28**
80. 56 gr is gazi (CO) ning normal sharoitdagi hajmini (l) hisoblang.
A) 2,24 **B) 448** C) 565 D) 8,96
81. 28 gr is gazi (CO) ning normal sharoitdagi hajmini (l) hisoblang.
A) **22,4** B) 4,48 C) 565 D) 8,96

I. 3. Avagadro soni.

I.1. 0,1 mol is (CO) dagi molekular sonini toping.

Yechish; 1) 1 molda $\frac{\quad}{\quad} 6,02 \cdot 10^{23}$ ta molekula bor
0,1 molda $\frac{\quad}{\quad} x =$

$$2) x = \frac{0,1 \cdot 6,02 \cdot 10^{23}}{1} = 6,02 \cdot 10^{22} \text{ ta} \quad \text{J: } 6,02 \cdot 10^{22} \text{ ta molekula bor.}$$

2. 10 mol etandagi (C_2H_6) dagi molekular sonini toping.

- A) **$6,02 \cdot 10^{24}$** B) $3,01 \cdot 10^{24}$ C) $2,408 \cdot 10^{24}$ D) $1,806 \cdot 10^{24}$

3. 5 mol etandagi (C_2H_6) dagi molekular sonini toping.

- A) $6,02 \cdot 10^{24}$ **B) $3,01 \cdot 10^{24}$** C) $2,408 \cdot 10^{24}$ D) $1,806 \cdot 10^{24}$

4. 0,4 mol karbonat anhidrid (CO_2) dagi molekular sonini toping.

- A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ **C) $2,408 \cdot 10^{24}$** D) $1,806 \cdot 10^{24}$

5. 0,3 mol karbonat anhidrid (CO_2) dagi molekular sonini toping.

- A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) $2,408 \cdot 10^{24}$ **D) $1,806 \cdot 10^{24}$**

6. 0,15 mol benzol (C_6H_6) dagi molekular sonini hisoblang.

- A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ **C) $9,03 \cdot 10^{22}$** D) $1,806 \cdot 10^{24}$

7. 0,25 mol benzol (C_6H_6) dagi molekular sonini hisoblang.
 A) $1,505 \cdot 10^{23}$ B) $3,01 \cdot 10^{24}$ C) $2,408 \cdot 10^{24}$ D) $1,806 \cdot 10^{24}$
8. 4 mol sulfit anhidrid (SO_2) dagi molekular sonini toping.
 A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) **$2,408 \cdot 10^{24}$** D) $1,806 \cdot 10^{24}$
9. 3 mol sulfit anhidrid (SO_2) dagi molekular sonini toping.
 A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) $2,408 \cdot 10^{24}$ D) **$1,806 \cdot 10^{24}$**
10. 0,25 mol etan (C_2H_6) dagi molekular sonini hisoblang.
 A) **$1,505 \cdot 10^{23}$** B) $3,01 \cdot 10^{24}$ C) $2,408 \cdot 10^{24}$ D) $1,806 \cdot 10^{24}$
11. 0,35 mol etan (C_2H_6) dagi molekular sonini hisoblang.
 A) $6,02 \cdot 10^{24}$ B) **$2,107 \cdot 10^{23}$** C) $2,408 \cdot 10^{24}$ D) $1,806 \cdot 10^{24}$
12. 0,5 mol is gazi (CO) dagi molekular sonini hisoblang.
 A) $6,02 \cdot 10^{24}$ B) **$3,01 \cdot 10^{23}$** C) $2,408 \cdot 10^{24}$ D) $1,806 \cdot 10^{24}$
13. 0,6 mol is gazi (CO) dagi molekular sonini hisoblang.
 A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) $2,408 \cdot 10^{24}$ D) **$3,612 \cdot 10^{23}$**
14. 1,5 mol karbonat anhidrid (CO_2) dagi molekular sonini hisoblang.
 A) **$9,03 \cdot 10^{23}$** B) $3,01 \cdot 10^{24}$ C) $2,408 \cdot 10^{24}$ D) $1,806 \cdot 10^{24}$
15. 1,6 mol karbonat anhidrid (CO_2) dagi molekular sonini hisoblang.
 A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) $2,408 \cdot 10^{24}$ D) **$9,632 \cdot 10^{23}$**
16. 2 mol sulfit anhidrid (SO_2) dagi molekular sonini hisoblang.
 A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) **$1,204 \cdot 10^{24}$** D) $1,806 \cdot 10^{24}$
17. 0,2 mol sulfit anhidrid (SO_2) dagi molekular sonini hisoblang.
 A) **$1,204 \cdot 10^{23}$** B) $3,01 \cdot 10^{24}$ C) $2,408 \cdot 10^{24}$ D) $1,806 \cdot 10^{24}$
18. 6 mol propan (C_3H_8) dagi molekular sonini hisoblang.
 A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) **$36,12 \cdot 10^{23}$** D) $1,806 \cdot 10^{24}$
19. 7 mol propan (C_3H_8) dagi molekular sonini hisoblang.
 A) **$4,214 \cdot 10^{24}$** B) $3,01 \cdot 10^{24}$ C) $2,408 \cdot 10^{24}$ D) $1,806 \cdot 10^{24}$

II. 20. $3,01 \cdot 10^{23}$ metan (CH_4) molekulasining molini toping.

Yechish; 1) $6,02 \cdot 10^{23}$ ta molekula ————— 1 mol metanda

$3,01 \cdot 10^{23}$ ta molekula ————— x=

$$2) x = \frac{1 \cdot 3,01 \cdot 10^{23}}{6,02 \cdot 10^{23}} = 0,5 \text{ mol bo'ladi.}$$

J:0,5

21. $3,01 \cdot 10^{23}$ ta suv (H_2O) molekulasini necha mol keladi?

- A) **0,5** B) 10 C) 1,5 D) 12

22. $6,02 \cdot 10^{24}$ ta suv (H_2O) molekulasi necha mol keladi?
A) 0,5 **B) 10** C) 1,5 D) 12
23. $9,03 \cdot 10^{23}$ ta sulfat kislota (H_2SO_4) molekulasi necha mol keladi?
A) 0,5 B) 10 **C) 1,5** D) 12
24. $7,224 \cdot 10^{24}$ ta sulfat kislota (H_2SO_4) molekulasi necha mol keladi?
A) 0,5 B) 10 C) 1,5 **D) 12**
25. $15,05 \cdot 10^{23}$ ta sulfat angidrid (SO_3) molekulasi necha mol keladi?
A) 2,5 B) 10 C) 1,5 D) 12
26. $4,515 \cdot 10^{24}$ ta sulfat angidrid (SO_3) molekulasi necha mol keladi?
A) 0,5 B) 10 **C) 7,5** D) 12
27. $3,01 \cdot 10^{23}$ ta karbonat angidrid (CO_2) molekulasi necha mol keladi?
A) 0,5 B) 10 C) 1,5 D) 12
28. $0,602 \cdot 10^{24}$ ta karbonat angidrid (CO_2) molekulasi necha mol keladi?
A) 0,5 **B) 1** C) 1,5 D) 12
29. $9,03 \cdot 10^{25}$ ta oltingugurt(IV)-oksid (SO_2) molekulasi necha mol keladi?
A) 0,5 B) 10 **C) 150** D) 12
30. $9,03 \cdot 10^{24}$ ta oltingugurt(IV)-oksid (SO_2) molekulasi necha mol keladi?
A) 0,5 B) 10 **C) 15** D) 12
31. $15,05 \cdot 10^{22}$ ta atsetilen (C_2H_2) molekulasi necha mol keladi?
A) 0,25 B) 10 C) 1,5 D) 12
32. $15,05 \cdot 10^{21}$ ta atsetilen (C_2H_2) molekulasi necha mol keladi?
A) 0,5 B) 10 **C) 0,025** D) 12
33. $24,08 \cdot 10^{22}$ ta xlor tuzi molekulasi necha mol keladi?
A) 0,4 B) 10 C) 1,5 D) 12
34. $24,08 \cdot 10^{25}$ ta xlor tuzi molekulasi necha mol keladi?
A) 0,5 B) 10 C) 1,5 **D) 400**
35. $6,02 \cdot 10^{22}$ ta oktan (C_8H_{18}) molekulasi necha mol keladi?
A) 0,5 **B) 0,1** C) 1,5 D) 12
36. $6,02 \cdot 10^{24}$ ta oktan (C_8H_{18}) molekulasi necha mol keladi?
A) 0,5 **B) 10** C) 1,5 D) 12

37. $3,01 \cdot 10^{23}$ ta tulki dumi (NO_2) molekulasi necha mol keladi?

- A) **0,5** B) 10 C) 1,5 D) 12

38. $3,01 \cdot 10^{20}$ ta tulki dumi (NO_2) molekulasi necha mol keladi?

- A) **0,0005** B) 10 C) 1,5 D) 12

III. 39. 2,24 l(n.sh) da is gazi (CO) dagi molekular sonini toping.

Yechish; 1) har qanday modda n.sh da 22,4 l hajmni egallaydi.

2) 22,4 l(n.sh) da _____ $6,02 \cdot 10^{23}$ molekula bor

2,24 l(n.sh) da _____ x=

$$x = \frac{2,24 \cdot 6,02 \cdot 10^{23}}{22,4} = 6,02 \cdot 10^{22}$$

J: $6,02 \cdot 10^{22}$ ta

40. 2,24 l (n.sh) etandagi (C_2H_6) molekular sonini hisoblang.

- A) **$6,02 \cdot 10^{22}$** B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) $1,806 \cdot 10^{24}$

41. 3,36 l azot(II)-oksid (NO) dagi molekular sonini hisoblang.

- A) $6,02 \cdot 10^{24}$ **B) $9,03 \cdot 10^{22}$** C) $36,12 \cdot 10^{23}$ D) $1,806 \cdot 10^{24}$

42. 4,48 l azot(IV)-oksid (NO_2) dagi molekular sonini hisoblang.

- A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ **D) $1,204 \cdot 10^{23}$**

43. 5,6 l azot(I)-oksid (N_2O) dagi molekular sonini hisoblang.

- A) **$1,505 \cdot 10^{23}$** B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) $1,806 \cdot 10^{24}$

44. 6,72 l ammiak (NH_3) dagi molekular sonini hisoblang.

- A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ **D) $1,806 \cdot 10^{23}$**

45. 13,44 l oltingugurt(IV)-oksid (SO_2) dagi molekular sonini toping.

- A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ **C) $3,612 \cdot 10^{23}$** D) $1,806 \cdot 10^{24}$

46. 156,8 l atsetilen (C_2H_2) dagi molekular sonini toping.

- A) **$42,14 \cdot 10^{23}$** B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) $1,806 \cdot 10^{24}$

47. 17,92 l vodorod fluorid (HF) dagi molekular sonini hisoblang.

- A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ **D) $4,816 \cdot 10^{23}$**

48. 11,2 l fosfin (PH_3) dagi molekular sonini hisoblang.

- A) $6,02 \cdot 10^{24}$ **B) $3,01 \cdot 10^{23}$** C) $36,12 \cdot 10^{23}$ D) $1,806 \cdot 10^{24}$

IV. 49. 4,8 gr metan (CH_4) dagi molekular sonini hisoblang.

Yechish. 1) har qanday moddaning 1 mol massasida $6,02 \cdot 10^{23}$ ta molekula bo'ladi.

16 gr metanda _____ $6,02 \cdot 10^{23}$ ta molekula bor

4,8 gr metanda _____ x=

$$3) x = \frac{4,8 \cdot 6,02 \cdot 10^{23}}{16} = 1,806 \cdot 10^{23} \text{ ta molekula bor.}$$

J: $1,806 \cdot 10^{23}$

50. 4,4 gr azot(I)-oksid dagi molekular sonini hisoblang.

- A) **$6,02 \cdot 10^{22}$** B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) $1,806 \cdot 10^{24}$

51. 4,8 gr vodorod sulfidagi molekular sonini hosblang.
A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) **$8,5 \cdot 10^{22}$**
52. 35,2 gr propandagi molekular sonini hosblang.
A) **$4,816 \cdot 10^{23}$** B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) $1,806 \cdot 10^{24}$
53. 54 gr etandagi molekular sonini hosblang.
A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) **$10,836 \cdot 10^{23}$** D) $1,806 \cdot 10^{24}$
54. 12 gr ozondagi molekular sonini hosblang.
A) **$1,505 \cdot 10^{23}$** B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) $1,806 \cdot 10^{24}$
55. 7,8 gr asetilendagi molekular sonini toping.
A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) **$1,806 \cdot 10^{23}$**
56. 12 gr mochevina ($\text{CO}(\text{NH}_2)_2$) dagi molekular sonini toping.
A) **$1,204 \cdot 10^{23}$** B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) $1,806 \cdot 10^{24}$
57. 85,2 gr dekan ($\text{C}_{10}\text{H}_{22}$) dagi molekular sonini hisoblang.
A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) **$3,612 \cdot 10^{23}$** D) $1,806 \cdot 10^{24}$
58. 20 gr geptan (C_7H_{16}) dagi molekular sonini toping.
A) $6,02 \cdot 10^{24}$ B) **$1,204 \cdot 10^{23}$** C) $36,12 \cdot 10^{23}$ D) $1,806 \cdot 10^{24}$

VI. 59. 2,22 gr malahid ($\text{Cu}(\text{OH})_2 \cdot \text{CuCO}_3$) dagi kislorod atomlar sonini toping.

Yechish; 1) $\text{Cu}(\text{OH})_2 \cdot \text{CuCO}_3 = 5$ ta kislorod atomi bor yoki ($5 \cdot 6,02 \cdot 10^{23}$) $30,1 \cdot 10^{23}$ ta atom bor. malahit molekulyar massasi 222 gr.ga teng.

2) 222 gr da _____ $30,1 \cdot 10^{23}$ ta kislorod atomi bor

2,22 gr da _____ x=

$$x = \frac{2,22 \cdot 30,1 \cdot 10^{23}}{222} = 3,01 \cdot 10^{22} \text{ ta kislorod atomi bor. J: } 3,01 \cdot 10^{22}$$

60. 75,6 gr ammoniy bixromat ($(\text{NH}_4)_2\text{Cr}_2\text{O}_7$) dagi xrom atomlari sonini hisoblang.

A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) **$3,612 \cdot 10^{23}$** D) $1,806 \cdot 10^{24}$

61. 75,6 gr ammoniy bixromat ($(\text{NH}_4)_2\text{Cr}_2\text{O}_7$) dagi azot atomlari sonini hisoblang.

A) $6,02 \cdot 10^{24}$ B) **$3,612 \cdot 10^{23}$** C) $36,12 \cdot 10^{23}$ D) $1,806 \cdot 10^{24}$

62. 127,2 gr kaliy fosfat (K_3PO_4) dagi kaliy atomlari sonini hisoblang.

A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) **$10,836 \cdot 10^{23}$**

63. 127,2 gr kaliy fosfat (K_3PO_4) dagi kislorod atomlari sonini hisoblang.

A) **$14,448 \cdot 10^{23}$** B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) $1,806 \cdot 10^{24}$

64. 22 gr kaliy permanganat (KMnO_4) dagi marganets atomlar sonini toping.

A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) **$0,838 \cdot 10^{23}$**

65. 22 gr kaliy permanganat (KMnO_4) dagi kislorod atomlar sonini toping.
A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) **$3,35 \cdot 10^{23}$** D) $1,806 \cdot 10^{24}$
66. 17 gr zar suvi ($\text{HNO}_3 \cdot 3\text{HCl}$) dagi xlor atomlar sonini toping.
A) **$1,78 \cdot 10^{23}$** B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) $1,806 \cdot 10^{24}$
67. 17 gr zar suvi ($\text{HNO}_3 \cdot 3\text{HCl}$) dagi vodorod atomlar sonini toping.
A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) **$2,37 \cdot 10^{23}$** D) $1,806 \cdot 10^{24}$
68. 28,4 gr glauber tuzi ($\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$) dagi natriy atomlar sonini toping.
A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) **$1,06 \cdot 10^{23}$**
69. 28,4 gr glauber tuzi ($\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$) dagi kislorod atomlar sonini toping.
A) $6,02 \cdot 10^{24}$ B) **$7,4 \cdot 10^{23}$** C) $36,12 \cdot 10^{23}$ D) $1,806 \cdot 10^{24}$
70. 10 gr silvinit ($\text{KCl} \cdot \text{NaCl}$) dagi xlor atomlar sonini toping.
A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) **$9,05 \cdot 10^{22}$**
71. 10 gr silvinit ($\text{KCl} \cdot \text{NaCl}$) dagi natriy atomlar sonini toping.
A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) **$4,5 \cdot 10^{22}$** D) $1,806 \cdot 10^{24}$
72. 25 gr mis kuporosi ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$) dagi kislorod atomlar sonini toping.
A) **$5,418 \cdot 10^{23}$** B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) $1,806 \cdot 10^{24}$
73. 25 gr mis kuporosi ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$) dagi vodorod atomlar sonini toping.
A) **$6,02 \cdot 10^{23}$** B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) $1,806 \cdot 10^{24}$
74. 55,2 gr xalkopirit (CuFeS_2) dagi temir atomlar sonini toping.
A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) $36,12 \cdot 10^{23}$ D) **$1,806 \cdot 10^{23}$**
75. 55,2 gr xalkopirit (CuFeS_2) dagi oltingugurt atomlar sonini toping.
A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) **$3,612 \cdot 10^{23}$** D) $1,806 \cdot 10^{24}$
76. 30 gr gips ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) dagi vodarod atomlar sonini toping.
A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) **$4,2 \cdot 10^{23}$** D) $1,806 \cdot 10^{24}$
77. 30 gr gips ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) dagi kislorod atomlar sonini toping.
A) $6,02 \cdot 10^{24}$ B) $3,01 \cdot 10^{24}$ C) **$6,3 \cdot 10^{23}$** D) $1,806 \cdot 10^{24}$

I. 4. Kimyoviy formula bo'yicha hisoblash

a) Moddalardagi elementlarning massa nisbatini aniqlash

K_2SO_4 dagi elementlarning massa nisbatini toping.

Yechish: 1) kaliy sulfat tarkibidagi har bir atomning molekulyar massasini topamiz.

$$K = 2 \cdot 39 = 78$$

$$S = 32$$

$$O = 4 \cdot 16 = 64$$

2) endi har bir element atomining massasini eng kichik massaga ega bo'lgan element atomi massasiga bo'lib chiqsak massa nisbat kelib chiqadi.

3) eng kichik massaga ega bo'lgan element oltingugurt

$$K = 78:32 = 2,4375$$

$$S = 32:32 = 1$$

$$O = 64:32 = 2$$

4) demak massa nisbati **2,4375:1:2** nisbatda ekan.

1. N_2O – azot(I)-oksiddagi elementlarning massa nisbatini toping.

A) 1:2 B) 3:2 C) 1,5:2 **D) 1,75:1**

2. NO - azot(II)-oksiddagi elementlarning massa nisbatini toping.

A) **1,14:1** B) 3:2 C) 1,5:2 D) 1,75:1

3. NO_2 - azot(IV)-oksiddagi elementlarning massa nisbatini toping.

A) 1,14:1 B) 3:2 **C) 2,3:1** D) 1,75:1

4. N_2O_3 – azot(III)-oksiddagi elementlarning massa nisbatini toping.

A) **1:1,7** B) 3:2 C) 1,5:2 D) 1,75:1

5. N_2O_5 – azot(V)-oksiddagi elementlarning massa nisbatini toping.

A) 1:1,7 **B) 1:2,86** C) 1,5:2 D) 1,75:1

6. FeO - temir (II)-oksiddagi elementlarning massa nisbatini toping.

A) 1:1,7 B) 3:2 **C) 3,5:1** D) 1,75:1

7. Fe_2O_3 - temir (III)-oksiddagi elementlarning massa nisbatini toping.

A) 1:1,7 B) 3:2 C) 3,5:1 **D) 2,33:1**

8. Fe_3O_4 - temir qo'shoksiddagi elementlarning massa nisbatini toping.

A) **2,625:1** B) 3:2 C) 3,5:1 D) 1,75:1

9. $H_2Cr_2O_7$ – biaxromat kislotadagi elementlarning massa nisbatini toping.

A) 1:32:12 **B) 1:52:56** C) 1:12:16 D) 1:16:18

10. H_2CrO_4 - xromat kislotadagi elementlarning massa nisbatini toping.

A) 1:32:12 B) 1:52:56 **C) 1:26:32** D) 1:16:18

11. H_3PO_4 – ortofosfat k-tadagi elementlarning massa nisbatini toping.
A) 1:32:12 B) 1:52:56 C) 1:12:16 **D) 1:10,33:21,33**
12. H_3PO_3 - fosfit kislotadagi elementlarning massa nisbatini toping.
A) 1:10,33:16 B) 1:52:56 C) 1:12:16 D) 1:16:18
13. HPO_3 - metafosfat k dagi elementlarning massa nisbatini toping.
A) 1:10,33:16 B) 1:52:56 **C) 1:31:48** D) 1:16:18
14. $H_4P_2O_7$ -pirofosfat k dagi elementlarning massa nisbatini toping.
A) 1:10,33:16 B) 1:52:56 C) 1:31:48 **D) 1:15,5:28**
15. $Cr(OH)_2$ - xrom (II)-gidroksid dagi elementlarning massa nisbatini toping.
A) 1:10,33:16 **B) 26:16:1** C) 1:31:48 D) 1:16:18
16. $Cr(OH)_3$ - xrom(III)- gidroksid dagi elementlarning massa nisbatini toping.
A) 17,33:16:1 B) 1:52:56 C) 1:31:48 D) 1:16:18
17. $Fe(OH)_2$ - temir (II) gidroksid dagi elementlarning massa nisbatini toping.
A) 1:10,33:16 B) 1:52:56 **C) 28:16:2** D) 1:16:18
18. $Fe(OH)_3$ - temir(III)- gidroksid dagi elementlarning massa nisbatini toping.
A) 18,67:16:1 B) 1:52:56 C) 1:31:48 D) 1:16:18
19. $NaHCO_3$ - natriy gidrokarbonat (ichimlik soda) dagi elementlarning massa nisbatini toping.
A) 23:10,33:16 **B) 23:1:12:48** C) 23:31:48 D) 23:16:18
20. $CuSO_4$ - mis(II)-sulfatdagi elementlarning massa nisbatini toping.
A) 2:1:2 B) 1:2:3 C) 1:4:5 D) 1:16:18
21. $KMnO_4$ - kaliy permanganatdagi elementlarning massa nisbatini toping.
A) 1:10,33:16 B) 1:52:56 **C) 1:1,41:1,64** D) 1:16:18
22. $K_2Cr_2O_7$ - kaliy bixromatdagi elementlarning massa nisbatini toping.
A) 1:1,33:1,44 B) 1:52:56 C) 1:31:48 D) 1:16:18
23. $(NH_4)_2Cr_2O_7$ - ammoniy bixromatdagi elementlarning massa nisbatini toping.
A) 3,5:10,33:16 B) 3,5:52:56 **C) 3,5:1:13:14** D) 3,5:2:1:15

b) Moddalarning foiz tarkibini hisoblash

K_2SO_4 ni foiz tarkibini hisoblang.

Yechish: 1) kaliy sulfatning molekulyar massasini topamiz.

$$Mr = (2 \cdot 39) + 32 + (4 \cdot 16) = 174 \text{ ga teng ekan.}$$

2) endi foiz tarkibini topish formulasiga qo'yamiz. Buning uchun har bir element massasini shu birikma molekulyar massasiga bo'lib 100 ga ko'paytirsak foiz tarkibi kelib chiqadi. $C\% = \frac{m}{Mr}$: shu formulaga qo'yamiz.

$$C\%_{\text{Kaliy}} = \frac{78}{174} \cdot 100 = 44,83\% \text{ kaliy}$$

$$C\%_{\text{oltingurt}} = \frac{32}{174} \cdot 100 = 18,39\% \text{ S}$$

$$C\%_{\text{kislorod}} = \frac{64}{174} \cdot 100 = 36,78\% \text{ O}_2$$

3) demak foiz tarkibi **44,83 % K: 18,39 % S: 36,78 % O₂**

1. N₂O – azot(I)-oksid ni foiz tarkibini hisoblang.

- A) **N-63,64%** **O-36,36%** B) N-36,84% O-63,16%
 C) N-46,67% O-53,33% D) N-30,4% O-69,6%

2. NO- azot(II)-oksid ni foiz tarkibini hisoblang.

- A) N-63,64% O-36,36% B) N-36,84% O-63,16%
 C) **N-46,67%** **O-53,33%** D) N-30,4% O-69,6%

3. NO₂- azot(IV)-oksid ni foiz tarkibini hisoblang.

- A) N-63,64% O-36,36% B) N-36,84% O-63,16%
 C) N-46,67% O-53,33% **D) N-30,4%** **O-69,6%**

4. N₂O₃ – azot(III)-oksid ni foiz tarkibini hisoblang.

- A) N-63,64% O-36,36% **B) N-36,84%** **O-63,16%**
 C) N-46,67% O-53,33% D) N-30,4% O-69,6%

5. N₂O₅ – azot(V)-oksid ni foiz tarkibini hisoblang.

- A) N-63,64% O-36,36% B) N-36,84% O-63,16%
 C) **N-25,9%** **O-74,1%** D) N-30,4% O-69,6%

6. FeO- temir (II)-oksid ni foiz tarkibini hisoblang.

- A) **Fe-77,77%** **O-22,22%** B) Fe-72,4% O-27,6%
 C) Fe-46,67% O-53,33% D) Fe-70% O-30%

7. Fe₂O₃ - temir (III)-oksid ni foiz tarkibini hisoblang.

- A) Fe-77,77% O-22,22% B) Fe-72,4% O-27,6%
 C) Fe-46,67% O-53,33% **D) Fe-70%** **O-30%**

8. Fe₃O₄ - temir qo'shoksid ni foiz tarkibini hisoblang.

- A) Fe-77,77% O-22,22% **B) Fe-72,4%** **O-27,6%**
 C) Fe-46,67% O-53,33% D) Fe-70% O-30%

9. H₂Cr₂O₇ – bixromat k ni foiz tarkibini hisoblang.

- A) **H-0,92%** **Cr-51,38%** **O-47,71%**
 B) H-72,4% Cr-27,6% O-23,25
 C) H-46,67% Cr-53,33% O-45,67

D) H-1,7 Cr-44,07% O-54,24%

10. H_2CrO_4 - xromat kislota ni foiz tarkibini hisoblang.

A) H-0,92% Cr-51,38% O-47,71%
 B) H-72,4% Cr-27,6% O-23,25
 C) H-46,67% Cr-53,33% O-45,67
D) H-1,7% Cr-44,07% O-54,24%

11. H_3PO_4 – ortofosfat k-ta ni foiz tarkibini hisoblang.

A) H-0,92% P-51,38% O-47,71%
 B) H-72,4% P-27,6% O-23,25%
C) H-3,06% P-31,63% O-65,31%
 D) H-1,7% P-44,07% O-54,24%

12. H_3PO_3 - fosfit kislota ni foiz tarkibini hisoblang.

A) H-0,92% P-51,38% O-47,71%
B) H-3,66% P-37,8% O-58,54%
 C) H-46,67% P-53,33% O-45,67%
 D) H-1,7% P-44,07% O-54,24%

13. HPO_3 - metafosfat k ni foiz tarkibini hisoblang.

A) H-0,92% P-51,38% O-47,71%
 B) H-72,4% P-27,6% O-23,25%
C) H-1,25% P-38,75% O-60%
 D) H-1,7% P-44,07% O-54,24%

14. $H_4P_2O_7$ -pirofosfat k ni foiz tarkibini hisoblang.

A) H-0,92% P-51,38% O-47,71%
B) H-2,25% P-34,83% O-62,92%
 C) H-46,67% P-53,33% O-45,67%
 D) H-1,7% P-44,07% O-54,24%

15. $Cr(OH)_2$ - xrom (II)-gidroksid ni foiz tarkibini hisoblang.

A) Cr-60,5% O-37,21% H-2,33%
 B) Cr-72,4% O-27,6% H-23,25%
 C) Cr-50,5% O-31,07% H-45,67%
 D) Cr-1,7% O-44,07% H-54,24%

16. $Cr(OH)_3$ - xrom(III)- gidroksid ni foiz tarkibini hisoblang.

A) Cr-0,92% O-51,38% H-47,71%
 B) Cr-72,4% O-27,6% H-23,25%
C) Cr-50,5% O-46,6% H-2,9%
 D) Cr-1,7% O-44,07% H-54,24%

17. $Fe(OH)_2$ - temir (II) gidroksid ni foiz tarkibini hisoblang.

A) Fe-0,92% O-51,38% H-47,71%
B) Fe-62,22% O-35,55% H-22,22%

- C) Fe-46,67% O-53,33% H-45,67%
 D) Fe-1,7% O-44,07% H-54,24%

18. $\text{Fe}(\text{OH})_3$ - temir(III)- gidroksid ni foiz tarkibini hisoblang.

- A) Fe-0,92% O-51,38% H-47,71%
 B) Fe-62,22% O-35,55% H-22,22%
C) Fe-52,34% O-44,86% H-2,8%
 D) Fe-1,7% O-44,07% H-54,24%

19. NaHCO_3 - natriy gidrokarbonat (ichimlik soda) ni foiz tarkibini hisoblang.

20. CuSO_4 - mis(II)-sulfat ni foiz tarkibini hisoblang.

I. 5. Moddalar tarkibidagi elementlar valentligini aniqlash

1. N_2O – azot(I)-oksid tarkibidagi azotning valentligini aniqlang?

- A) I B) II C) III D) IV

2. NO - azot(II)-oksid tarkibidagi azotning valentligini aniqlang?

- A) I B) II C) III D) IV

3. NO_2 - azot(IV)-oksid tarkibidagi azotning valentligini aniqlang?

- A) I B) II C) III D) IV

4. N_2O_3 – azot(III)-oksid tarkibidagi azotning valentligini aniqlang?

- A) I B) II C) III D) IV

5. N_2O_5 – azot(V)-oksid tarkibidagi temirning valentligini aniqlang?

- A) I B) II C) III D) IV

6. FeO - temir (II)-oksid tarkibidagi temirning valentligini aniqlang?

- A) I B) II C) III D) IV

7. Fe_2O_3 - temir (III)-oksid tarkibidagi temirning valentligini aniqlang?

- A) I B) II C) III D) IV

8. Fe_3O_4 - temir qo'shoksid tarkibidagi temirning valentligini aniqlang?

- A) I,II B) II,III C) III,IV D) IV

9. $\text{H}_2\text{Cr}_2\text{O}_7$ – bixromat k tarkibidagi xromning valentligini aniqlang?

- A) VI B) II C) III D) IV

10. H_2CrO_4 - xromat kislota tarkibidagi xromning valentligini aniqlang?

- A) I B) II C) VI D) IV

11. H_3PO_4 – ortofosfat k-ta tarkibidagi fosforning valentligini aniqlang?

- A) I B) II C) VII D) V

12. H_3PO_3 - fosfit kislota tarkibidagi fosforning valentligini aniqlang?

- A) V B) VI C) VIII D) IV

13. HPO_3 - metafosfat k tarkibidagi fosforning valentligini aniqlang?

- A) I B) V C) III D) IV

14. $\text{H}_4\text{P}_2\text{O}_7$ -pirofosfat k tarkibidagi fosforning valentligini aniqlang?

- A) V B) II C) III D) IV

15. $\text{Cr}(\text{OH})_2$ - xrom (II)-gidroksid tarkibidagi xromning valentligini aniqlang?

- A) I B) II C) III D) IV

16. $\text{Cr}(\text{OH})_3$ - xrom(III)- gidroksid tarkibidagi xromning valentligini aniqlang?

- A) I B) II C) III D) IV

17. $\text{Fe}(\text{OH})_2$ - temir (II) gidroksid tarkibidagi temirning valentligini aniqlang?

- A) I B) II C) III D) IV
18. $\text{Fe}(\text{OH})_3$ - temir(III)- gidroksid tarkibidagi temirning valentligini aniqlang?
A) I B) II C) III D) IV
19. NaHCO_3 - natriy gidrokarbonat (ichimlik soda) tarkibidagi uglerodning valentligini aniqlang?
A) I B) II C) III D) IV
20. CuSO_4 - mis(II)-sulfat tarkibidagi olingugurtning valentligini aniqlang?
A) VI B) II C) III D) IV
21. KMnO_4 - kaliy permanganat tarkibidagi marganetsning valentligini aniqlang?
A) I B) II C) VII D) IV
22. $\text{K}_2\text{Cr}_2\text{O}_7$ - kaliy bixromat tarkibidagi xromning valentligini aniqlang?
A) VI B) II C) III D) IV
23. $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$ - ammoniy bixromat tarkibidagi azotning valentligini aniqlang?
A) I B) II C) III D) IV

1.6. Valentlik yordamida formula tuzish. Oksid, asos, kislota, tuz Moddalarning grafik (struktura) formulalarini tuzish.

ZnO , CrO , Cr_2O_3 , CrO_3 , Li_2O , Na_2O , FeO , Fe_2O_3 , Fe_3O_4 , Cu_2O , CuO , Ag_2O , BaO , $\text{Be}(\text{OH})_2$, NaOH , $\text{Mg}(\text{OH})_2$, $\text{Al}(\text{OH})_3$, KOH , $\text{Ca}(\text{OH})_2$, RbOH , $\text{Sr}(\text{OH})_2$, CsOH , CuOH , $\text{Cu}(\text{OH})_2$, $\text{Zn}(\text{OH})_2$, $\text{Sn}(\text{OH})_2$, $\text{Sn}(\text{OH})_4$, $\text{Pb}(\text{OH})_2$, $\text{Pb}(\text{OH})_4$, $\text{Cr}(\text{OH})_3$, Na_2S , K_2S , MgS , CaS , Al_2S_3 , Na_2SO_3 , K_2SO_3 , MgSO_3 , CaSO_3 , $\text{Al}_2(\text{SO}_3)_2$, CuSO_3 , BaSO_3 , NaNO_2 , KNO_2 , $\text{Mg}(\text{NO}_2)_2$, $\text{Al}(\text{NO}_2)_3$, Na_3PO_4 , K_3PO_4 , $\text{Mg}_3(\text{PO}_4)_2$, $\text{Ca}_3(\text{PO}_4)_2$, NaClO_4 , KClO_4 , $\text{Mg}(\text{ClO}_4)_2$, NaClO_2 , KClO_2 , $\text{Ca}(\text{ClO}_2)_2$, Na_2SiO_3 , K_2SiO_3

Abituriyentlarimiz diqqatiga Nobel repetitorlik o'quv markazimizga taklif qilamiz. Manzil Farg'ona viloyati Bog'dod tumani markazidagi 6-bog'cha yonginasida.

1. 7. Kimyoviy reaksiyalarlarning turlari

a) Birikish reaksiyalari

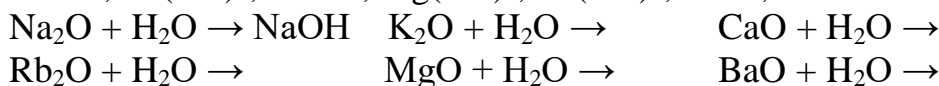
Oddiy moddalarning o'zaro birikishi

Na_2O , CaS , CO , Na_2S , CO_2 , CuCl_2 , P_2O_3 , ZnCl_2 , SO_2 , CaCl_2 , CaO , NH_3 , HCl , HJ , HBr , H_2S , HF , SiO_2 , MgO , SnCl_2 , P_2O_5 , AlCl_3 , Al_2O_3 , CuO , FeCl_3 , K_2O , NaCl , CuS , Cr_2S_3 ;

- | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|--|---|--|--|--|---------------------------------------|---|---|---|---|---|--|--|--|--|--|--|---|--|---------------------------------------|---------------------------------------|--|---------------------------------------|---------------------------------------|
| 1 $\text{Na} + \text{O}_2 \rightarrow \text{Na}_2\text{O}$ | 2 $\text{C}^{\text{II}} + \text{O}_2 \rightarrow$ | 3 $\text{C}^{\text{IV}} + \text{O}_2 \rightarrow$ | 4 $\text{P}^{\text{III}} + \text{O}_2 \rightarrow$ | 5 $\text{S}^{\text{IV}} + \text{O}_2 \rightarrow$ | 6 $\text{Ca} + \text{O}_2 \rightarrow$ | 7 $\text{H}_2 + \text{Cl}_2 \rightarrow$ | 8 $\text{H}_2 + \text{Br}_2 \rightarrow$ | 9 $\text{K} + \text{O}_2 \rightarrow$ | 10 $\text{Cu}^{\text{II}} + \text{O}_2 \rightarrow$ | 11 $\text{Al} + \text{O}_2 \rightarrow$ | 12 $\text{P}^{\text{V}} + \text{O}_2 \rightarrow$ | 13 $\text{Mg} + \text{O}_2 \rightarrow$ | 14 $\text{Si}^{\text{IV}} + \text{O}_2 \rightarrow$ | 15 $\text{H}_2 + \text{F}_2 \rightarrow$ | 16 $\text{H}_2 + \text{N}_2 \rightarrow$ | 17 $\text{Sn}^{\text{II}} + \text{Cl}_2 \rightarrow$ | 18 $\text{Ca} + \text{Cl}_2 \rightarrow$ | 19 $\text{Al} + \text{Cl}_2 \rightarrow$ | 20 $\text{Zn} + \text{Cl}_2 \rightarrow$ | 21 $\text{Fe}^{\text{III}} + \text{Cl}_2 \rightarrow$ | 22 $\text{Cu}^{\text{II}} + \text{Cl}_2 \rightarrow$ | 23 $\text{Na} + \text{S} \rightarrow$ | 24 $\text{Na} + \text{S} \rightarrow$ | 25 $\text{Cr}^{\text{III}} + \text{S} \rightarrow$ | 26 $\text{Ca} + \text{S} \rightarrow$ | 27 $\text{Cu} + \text{S} \rightarrow$ |
|--|---|---|--|---|--|--|--|---------------------------------------|---|---|---|---|---|--|--|--|--|--|--|---|--|---------------------------------------|---------------------------------------|--|---------------------------------------|---------------------------------------|

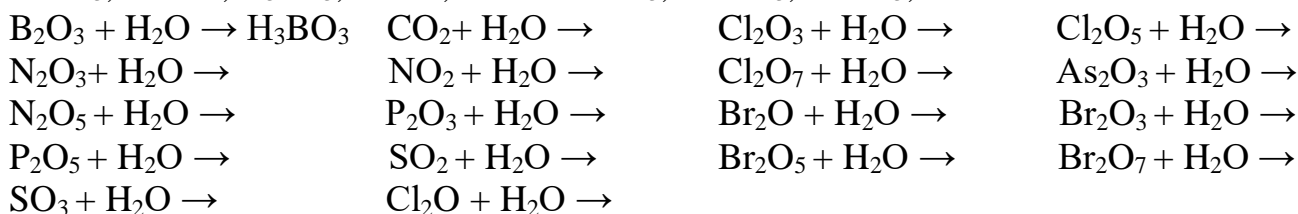
Asosli oksidlarga suvning ta'siri

NaOH, Ba(OH)₂, RbOH, Mg(OH)₂, Ca(OH)₂, KOH;



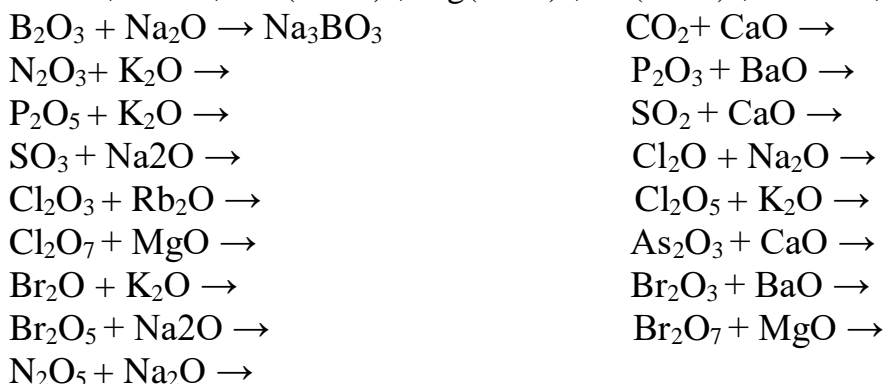
Kislotali oksidlarga suvning ta'siri

H₃BO₃, HBrO₄, HNO₂, HBrO₃, N₂O₅, H₃AsO₄, H₃PO₄, HClO₃, H₂SO₄, HClO, HClO₂, H₂SO₃, HClO₄, H₃PO₃, HBrO, HNO₂+HNO₃, HBrO₃, H₂CO₃;



Asosli oksidlarga kislotali oksidlarning ta'siri

Na₃BO₃, K₃PO₄, NaNO₂, NaNO₃, Ba₃(PO₃)₂, CaCO₃, CaSO₃, Mg(BrO₄)₂, NaClO, NaBrO₃, KClO₃, KBrO, Ca₃(AsO₃)₂, Mg(ClO₄)₂, Ba(BrO₂)₂, RbClO₂, Na₂SO₄;



b) O'rin olish reaksiyalari

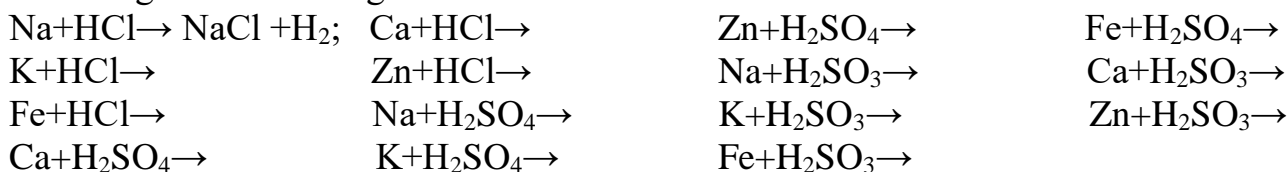
Metal oksidlariga vodorodning ta'siri



Metal oksidlariga is gazining ta'siri

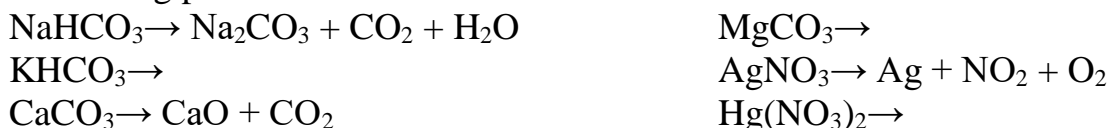


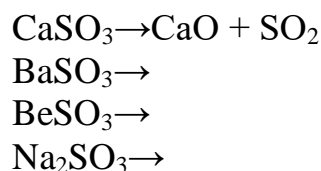
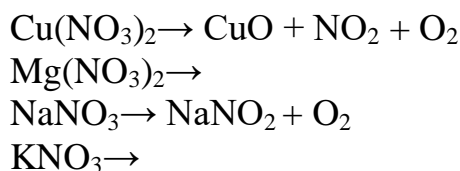
Metallarga kislotalarning ta'siri



c) Parchalanish reaksiyalari

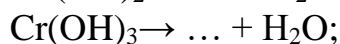
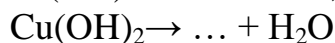
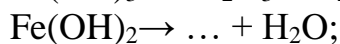
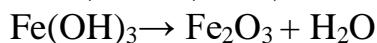
Tuzlarning parchalanishi





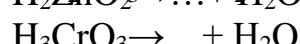
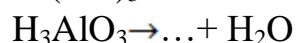
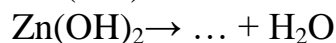
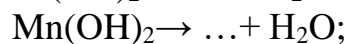
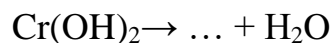
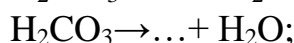
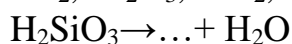
Asoslarning parchalanishi

Fe₂O₃, Al₂O₃, FeO, ZnO, CuO,
MnO, Cr₂O₃, CrO;



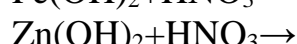
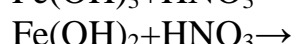
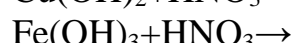
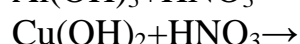
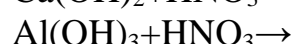
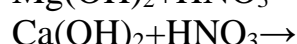
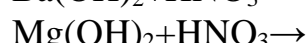
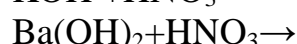
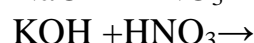
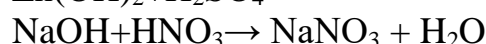
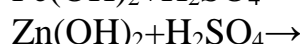
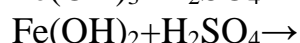
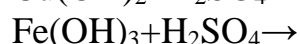
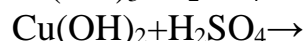
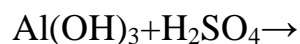
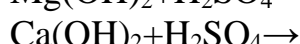
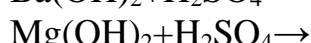
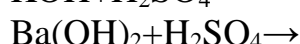
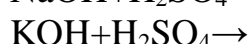
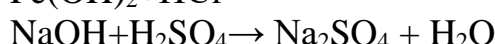
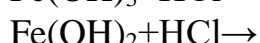
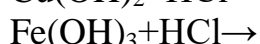
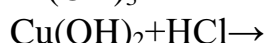
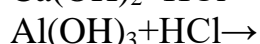
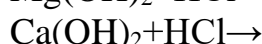
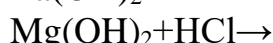
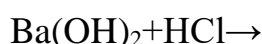
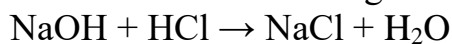
Kislotalarning parchalanishi

SO₂, Cr₂O₃, SiO₂, ZnO, CO₂, Al₂O₃;

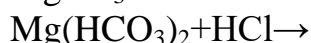
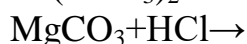
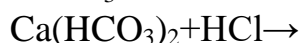
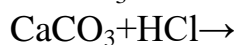
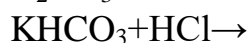
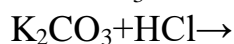
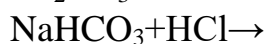


d) Almashinish reaksiyalari

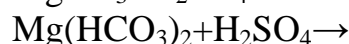
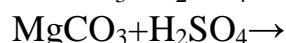
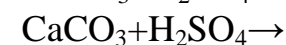
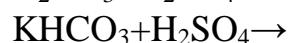
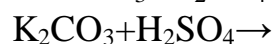
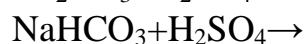
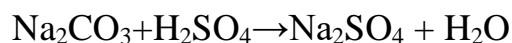
Asoslar va kislotalarning o'zaro ta'siri

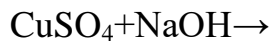
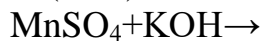
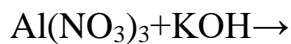
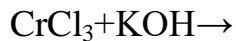
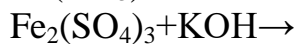
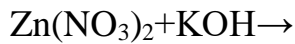
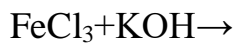


Tuzlarga kislotalarning ta'siri

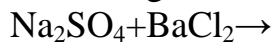
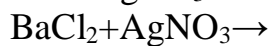
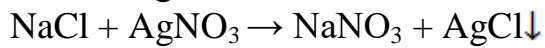


Tuzlarga asoslarning ta'siri

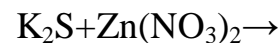
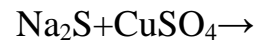
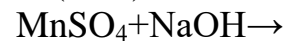
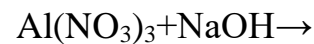
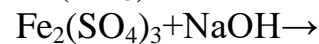
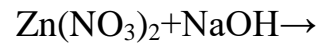
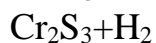
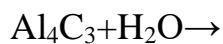
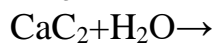
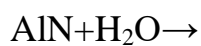




Tuzlarning o'zaro ta'siri



Tuzlarning gidrolizi (suv bilan ta'siri)



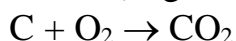
I.8. Kimyoviy tenglamani tenglang va kofitsientlar yig'indisini toping.

- $\text{Na} + \text{O}_2 \rightarrow \text{Na}_2\text{O}$
- $\text{C} + \text{O}_2 \rightarrow \text{CO}$
- $\text{Al} + \text{O}_2 \rightarrow \text{Al}_2\text{O}_3$
- $\text{P} + \text{O}_2 \rightarrow \text{P}_2\text{O}_5$
- $\text{CH}_4 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$
- $\text{SiH}_4 + \text{O}_2 \rightarrow \text{SiO}_2 + \text{H}_2\text{O}$
- $\text{SO}_2 + \text{O}_2 \rightarrow \text{SO}_3$
- $\text{Cr}(\text{OH})_3 \rightarrow \text{Cr}_2\text{O}_3 + \text{H}_2\text{O}$
- $\text{H}_3\text{CrO}_3 \rightarrow \text{Cr}_2\text{O}_3 + \text{H}_2\text{O}$
- $\text{Cl}_2\text{O} + \text{H}_2\text{O} \rightarrow \text{HClO}$
- $\text{Cl}_2\text{O}_5 + \text{H}_2\text{O} \rightarrow \text{HClO}_3$
- $\text{Cl}_2\text{O}_7 + \text{NaOH} \rightarrow \text{NaClO}_4 + \text{H}_2\text{O}$
- $\text{N}_2\text{O}_5 + \text{NaOH} \rightarrow \text{NaNO}_3 + \text{H}_2\text{O}$
- $\text{Na}_2\text{O} + \text{H}_2\text{O} \rightarrow \text{NaOH}$
- $\text{Na}_2\text{O} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{O}$
- $\text{Na}_2\text{O} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + \text{H}_2\text{O}$
- $\text{CaO} + \text{HNO}_3 \rightarrow \text{Ca}(\text{NO}_3)_2 + \text{H}_2\text{O}$
- $\text{CaO} + \text{P}_2\text{O}_5 \rightarrow \text{Ca}_3(\text{PO}_4)_2$
- $\text{Al}_2\text{O}_3 + \text{H}_2\text{SO}_4 \rightarrow \text{Al}_2(\text{SO}_4)_3 + \text{H}_2\text{O}$
- $\text{HCl} + \text{Na}_2\text{S} \rightarrow \text{NaCl} + \text{H}_2\text{S}$
- $\text{Mg} + \text{H}_2\text{O} \rightarrow \text{Mg}(\text{OH})_2 + \text{H}_2$
- $\text{Na}_2\text{O} + \text{H}_2\text{O} \rightarrow \text{NaOH}$
- $\text{CaH}_2 + \text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2 + \text{H}_2$
- $\text{MnCl}_2 + \text{KOH} \rightarrow \text{Mn}(\text{OH})_2 + \text{KCl}$
- $\text{CrBr}_2 + \text{KOH} \rightarrow \text{Cr}(\text{OH})_2 + \text{KBr}$
- $\text{Ba}(\text{OH})_2 + \text{HCl} \rightarrow \text{BaCl}_2 + \text{H}_2\text{O}$
- $\text{SO}_2 + \text{KOH} \rightarrow \text{K}_2\text{SO}_3 + \text{H}_2\text{O}$
- $\text{P}_2\text{O}_5 + \text{KOH} \rightarrow \text{K}_3\text{PO}_4 + \text{H}_2\text{O}$
- $\text{Cl}_2\text{O}_3 + \text{KOH} \rightarrow \text{KClO}_2 + \text{H}_2\text{O}$
- $\text{H}_2 + \text{Cl}_2 \rightarrow \text{HCl}$
- $\text{FeCl}_2 + \text{H}_2\text{SO}_4 \rightarrow \text{FeSO}_4 + \text{HCl}$
- $\text{FeS} + \text{HCl} \rightarrow \text{FeCl}_2 + \text{H}_2\text{S}$
- $\text{Al}_2\text{S}_3 + \text{HCl} \rightarrow \text{AlCl}_3 + \text{H}_2\text{S}$
- $\text{Al} + \text{HCl} \rightarrow \text{AlCl}_3 + \text{H}_2$
- $\text{Cr}(\text{OH})_2 + \text{HCl} \rightarrow \text{CrCl}_2 + \text{H}_2\text{O}$
- $\text{Cr}(\text{OH})_3 + \text{HCl} \rightarrow \text{CrCl}_3 + \text{H}_2\text{O}$
- $\text{Fe}(\text{OH})_3 + \text{H}_2\text{SO}_4 \rightarrow \text{Fe}_2(\text{SO}_4)_3 + \text{H}_2\text{O}$
- $\text{Fe}(\text{OH})_3 + \text{HNO}_3 \rightarrow \text{Fe}(\text{NO}_3)_3 + \text{H}_2\text{O}$
- $\text{H}_3\text{PO}_4 + \text{CaCl}_2 \rightarrow \text{Ca}_3(\text{PO}_4)_2 + \text{HCl}$
- $\text{K} + \text{O}_2 \rightarrow \text{K}_2\text{O}$
- $\text{Cu} + \text{O}_2 \rightarrow \text{CuO}$
- $\text{P} + \text{O}_2 \rightarrow \text{P}_2\text{O}_3$
- $\text{NH}_3 + \text{O}_2 \rightarrow \text{NO} + \text{H}_2\text{O}$
- $\text{PH}_3 + \text{O}_2 \rightarrow \text{P}_2\text{O}_5 + \text{H}_2\text{O}$
- $\text{CrO} + \text{O}_2 \rightarrow \text{Cr}_2\text{O}_3$
- $\text{Fe}(\text{OH})_3 \rightarrow \text{Fe}_2\text{O}_3 + \text{H}_2\text{O}$
- $\text{H}_3\text{AlO}_3 \rightarrow \text{Al}_2\text{O}_3 + \text{H}_2\text{O}$
- $\text{P}_2\text{O}_5 + \text{H}_2\text{O} \rightarrow \text{H}_3\text{PO}_4$
- $\text{Cl}_2\text{O}_3 + \text{H}_2\text{O} \rightarrow \text{HClO}_2$
- $\text{Cl}_2\text{O}_7 + \text{H}_2\text{O} \rightarrow \text{HClO}_4$
- $\text{SO}_3 + \text{NaOH} \rightarrow \text{Na}_2\text{SO}_4 + \text{H}_2\text{O}$
- $\text{P}_2\text{O}_5 + \text{Ca}(\text{OH})_2 \rightarrow \text{Ca}_3(\text{PO}_4)_2 + \text{H}_2\text{O}$
- $\text{K}_2\text{O} + \text{H}_2\text{O} \rightarrow \text{KOH}$
- $\text{CaO} + \text{HCl} \rightarrow \text{CaCl}_2 + \text{H}_2\text{O}$
- $\text{Na}_2\text{O} + \text{HNO}_3 \rightarrow \text{NaNO}_3 + \text{H}_2\text{O}$
- $\text{Na}_2\text{O} + \text{P}_2\text{O}_5 \rightarrow \text{Na}_3\text{PO}_4$
- $\text{Al}_2\text{O}_3 + \text{HCl} \rightarrow \text{AlCl}_3 + \text{H}_2\text{O}$
- $\text{Na} + \text{H}_2\text{O} \rightarrow \text{NaOH} + \text{H}_2$
- $\text{K} + \text{H}_2\text{O} \rightarrow \text{KOH} + \text{H}_2$
- $\text{Ca} + \text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2 + \text{H}_2$
- $\text{MgH}_2 + \text{H}_2\text{O} \rightarrow \text{Mg}(\text{OH})_2 + \text{H}_2$
- $\text{CuSO}_4 + \text{KOH} \rightarrow \text{Cu}(\text{OH})_2 + \text{K}_2\text{SO}_4$
- $\text{Fe}(\text{NO}_3)_2 + \text{KOH} \rightarrow \text{Fe}(\text{OH})_2 + \text{KNO}_3$
- $\text{Al}(\text{NO}_3)_3 + \text{KOH} \rightarrow \text{Al}(\text{OH})_3 + \text{KNO}_3$
- $\text{N}_2\text{O}_5 + \text{H}_2\text{O} \rightarrow \text{HNO}_3$
- $\text{CO}_2 + \text{KOH} \rightarrow \text{K}_2\text{CO}_3 + \text{H}_2\text{O}$
- $\text{Cl}_2\text{O} + \text{KOH} \rightarrow \text{KClO} + \text{H}_2\text{O}$
- $\text{Cl}_2\text{O}_5 + \text{NaOH} \rightarrow \text{NaClO}_3 + \text{H}_2\text{O}$
- $\text{NaCl} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + \text{HCl}$
- $\text{Al}_2\text{S}_3 + \text{H}_2\text{SO}_4 \rightarrow \text{Al}_2(\text{SO}_4)_3 + \text{H}_2\text{S}$
- $\text{Na}_2\text{S} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{S}$
- $\text{Na}_2\text{SiO}_3 + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{SiO}_3$
- $\text{Cu}(\text{OH})_2 + \text{HCl} \rightarrow \text{CuCl}_2 + \text{H}_2\text{O}$
- $\text{Fe}(\text{OH})_3 + \text{HCl} \rightarrow \text{FeCl}_3 + \text{H}_2\text{O}$
- $\text{Cu}(\text{OH})_2 + \text{H}_2\text{SO}_4 \rightarrow \text{CuSO}_4 + \text{H}_2\text{O}$
- $\text{Cu}(\text{OH})_2 + \text{HNO}_3 \rightarrow \text{Cu}(\text{NO}_3)_2 + \text{H}_2\text{O}$
- $\text{H}_2\text{SO}_4 + \text{Ba}(\text{NO}_3)_2 \rightarrow \text{BaSO}_4 + \text{HNO}_3$
- $\text{HCl} + \text{Na}_2\text{CO}_3 \rightarrow \text{NaCl} + \text{H}_2\text{O} + \text{CO}_2$

I.9. Reaksiya tenglamasi bo'yicha hisoblash

1. 60 g uglerod yonganda necha gramm CO₂ hosil bo'ladi?

Yechish: 1) uglerodni yonish tenglamasini yozamiz.



2) proporsiya tuzib hosil bo'lgan CO₂ massasini topamiz.

12 gr C yonganda _____ 44 gr CO₂ hosil bo'lsa

60 gr C yonganda _____ x = gr CO₂ hosil bo'ladi

$$x = \frac{60 \cdot 44}{12} = 220 \text{ gr hosil bo'ladi.}$$

J; 220

2. 23 gr Natriy kislorodda yonganda necha gr natriy peroksid (Na₂O₂) hosil bo'ladi.

A) 78 **B) 39** C) 46 D) 23

3. 6 gr uglerod (C^{II}) chala yonganda necha gr is gaz (CO) hosil bo'ladi.

A) 14 B) 28 C) 46 D) 24

4. 24,8 gr fosfor (P^{III}) yonganda necha gr P₂O₃ hosil bo'ladi

A) 14 B) 28 C) 46 **D) 44**

5. 19,2 gr oltingugurt yonganda (S^{IV} + O₂ →) necha gr sulfid angdrit (SO₂) hosil bo'ladi.

A) **38,4** B) 38 C) 46 D) 24

6. 40 gr kalsiy yonganda (Ca + O₂ →) necha gr so'ndirilmagan ohak (CaO) hosil bo'ladi.

A) 38,4 B) 38 **C) 56** D) 24

7. 8 gr vodorod xlorlanganda (H₂+Cl₂→) necha gr vodorod xlorid (HCl) hosil bo'ladi.

A) 384 B) 238 C) 246 **D) 292**

8. 4 gr vodorod brom bilan reaksiyaga kirishganda (H₂+Br₂→) necha gr vodorod bromid (HBr) hosil bo'ladi.

A) **324** B) 238 C) 246 D) 292

9. 1 gr vodorod ftor bilan reaksiyaga kirishganda (H₂+F₂→) necha gr vodorod ftorid (HF) hosil bo'ladi.

A) 84 B) 38 C) 46 **D) 20**

10. 10,8 gr Aluminiy xlorlanganda ($\text{Al} + \text{Cl}_2 \rightarrow$) necha gr Aluminiy xlorid (AlCl_3) hosil bo'ladi.

A) 38,4 **B) 53,4** C) 24,6 D) 29,2

11. 22,4 gr temir necha gr xlor bilan tasirlashganda ($\text{Fe}^{\text{III}} + \text{Cl}_2 \rightarrow$) temir - (III) xlorid (FeCl_3) hosil bo'ladi.

A) 38,4 B) 53,4 **C) 42,6** D) 29,2

12. 23 gr Natriy necha gr xlor bilan tasirlashganda ($\text{Na} + \text{Cl}_2 \rightarrow$) osh tuzi (NaCl) hosil bo'ladi.

A) 38,4 **B) 35,5** C) 24,6 D) 29,2

13. 12,8 gr Mis necha gr xlor bilan tasirlashganda ($\text{Cu}^{\text{II}} + \text{Cl}_2 \rightarrow$) mis – (II) xlorid (CuCl_2) hosil bo'ladi.

A) **14,2** B) 53,4 C) 24,6 D) 29,2

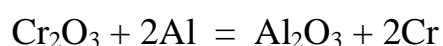
14. 62,4 gr Xrom necha gr oltingugurt bilan tasirlashganda ($\text{Cr}^{\text{III}} + \text{S} \rightarrow$) xrom-(III) sulfid (Cr_2S_3) hosil bo'ladi.

A) 38,4 B) 53,4 **C) 57,6** D) 29,2

15. 11,2 g temir bilan necha gramm oltingugurt reaksiyaga kirishadi?

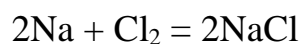
A) 3,2 **B) 6,4** C) 9,6 D) 12,4

16. 10,4 g massali xrom olish uchun zarur bo'lgan alyuminiynng massasini hisoblang.



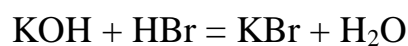
A) **5,4** B) 54 C) 27 D) 2,7

17. 5,85 g natriy xlorid hosil qilish uchun qancha massa natriy metali kerak?



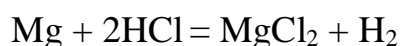
A) 23 **B) 2,3** C) 1,12 D) 46

18. 11,9 g massali kaliy bromid olish uchun qancha massa kaliy ishqori kerak?



A) **5,6** B) 2,24 C) 34 D) 54

19. 12 g magniy bilan necha gramm xlorid kislota reaksiyaga kirishadi?



A) 36,5 B) 18,25 C) 16,8 D) 73

20. 410 g aluminiy nitrid qizdirilgan suv bug'lari bilan reaksiyaga kirishganda, necha gramm ammiak olish mumkin? $\text{AlN} + 3\text{H}_2\text{O} = \text{Al(OH)}_3 + \text{NH}_3$

A) 150 B) 340 C) 85 D) 170

21. 22,2 g malaxit $[\text{Cu}_2(\text{OH})_2\text{CO}_3]$ parchalanganda necha gramm mis (II) oksid hosil bo'ladi?



A) 16 B) 1,8 C) 4,4 D) 32

22. 50 g ohaktosh parchalanganda necha gramm kuydirilgan ohak hosil bo'ladi?

A) 25 B) 26 C) 27 D) 28

Abituriyentlarimiz diqqatiga Nobel repetitorlik o'quv markazimizga taklif qilamiz. Manzil Farg'ona viloyati Bog'dod tumani markazidagi 6-bog'cha yonginasida.

I.10. Murkkab moddalarning formulalarini topish

1. Tarkibida 11,11% -H, 88,89% -O bo'lgan murakkab moddaning fo'rmulasini toping.

A) H_2O_2 B) H_2O C) H_3O D) D_2O

Yechish; 1) elementlar foizlarini molekulyar massasiga bo'lib nisbatlar topiladi.

$$\text{H} = \frac{11,11}{1} = 11,11 \text{ mol}, \quad \text{O} = \frac{88,89}{16} = 5,55 \text{ mol}$$

2) moli kichik bo'lganiga bo'lib nisbat topiladi.

$$\text{H} = 11,11:5,55 = 2 \quad 3) \text{murakkab moddada H}=2 \text{ va O}=1 \text{ demak}$$

$$\text{O} = 5,55:5,55 = 1 \quad \text{H}_2\text{O} \text{ formulaga mos keladi. } \mathbf{J:\text{H}_2\text{O}}$$

2. Kimyoviy birikma tarkibida massa ulushlari quyidagicha H-1,59 %, N-22,22 %, O-76,19 %. Shu birikmaning formulasi toping.

A) HNO_3 B) HNO_2 C) H_2NO_3 D) HNO

$$\mathbf{Yechish;}$$
 1) $\text{H} = \frac{1,59}{1} = 1,59 \text{ mol}, \quad \text{N} = \frac{22,22}{14} = 1,59 \text{ mol}, \quad \text{O} = \frac{76,19}{16} = 4,76 \text{ mol}$

$$2) \text{H} = 1,59:1,59 = 1 \quad 3) \text{formulasi } \text{HNO}_3$$

$$\text{N} = 1,59:1,59 = 1$$

$$\text{O} = 4,76:1,59 = 3$$

3. Tarkibida 40% oltingugurt va 60% kislorod bo'lgan birikmaning formulasi toping.

A)SO₂ B)SO C)SO₃ D)SO₆

4. Tarkibida 30,4% azot va 68,6% kislrod bo'lgan birikmaning formulasini toping.

A)NO₂ B)NO C)N₂O D)N₂O₃

5. 92,62% simob va 7,38% kislroddan iborat moddaning oddiy formulasini toping.

A)HgO₂ B)Hg₂O C)HgO D)HgO₄

6. Tarkibida 70% temir va 30% kislrod bo'lgan birikmaning oddiy formulasini chiqaring.

A)Fe₂O₃ B)FeO C)Fe₃O₄ D)FeO₂

7. 44,82% kaliy, 18,4% oltingugurt va 36,78% kislroddan iborat birikmaning oddiy formulasini chiqaring.

A)K₂SO₃ B)K₂S₂O₃ C)K₂SO₄ D)KSO₃

8. Birikma 13,04% vodorod, 34,78% kislrod va 52,17% ugleroddan tashkil topgan. Shu birikmaning oddiy formulasini chiqaring.

A)C₂H₅OH B)H₂CO₃ C)CH₃OH D)C₃H₇OH

9. Birikmada 22,13% alyuminiy, 25,41% fosfor va 52,46% kislrod bor. Birikmaning formulasini toping.

A)AlPO₃ B)Al₂(PO₃)₃ C)AlPO₄ D)Al₄(P₂O₇)₃

10. Birikmada 1,59% vodorod, 22,22% azot, 76,20% kislrod bo'lgan birikmaning haqiqiy formulasini toping.

A)HNO₃ B)HNO₂ C)NH₄NO₂ D)NH₄OH

11. Tarkibida 32,4% natriy, 22,53% oltingugurt va 45,07% kislrod bo'lgan birikmaning haqiqiy formulasini aniqlang.

A)Na₂SO₃ B)Na₂S₂O₃ C)Na₂SO₄ D)NaHSO₄

12. Molekulyar massasi 85 bo'lgan moddaning elementlar miqdori quyidagicha: 27,06% Na, 16,47% azot, 56,47% kislrod. Birikmaning formulasini toping.

A)NaNO₂ B)NaNO₃ C)NaNO D)KNO₃

13. Elementlar miqdori: Mg-28,6%, C-14,3%, O-57,14%. Molekulyar massasi 84 bo'lgan birikmaning formulasini toping.

A)MgCO₃ B)(HCOO)₂Mg C)Mg(HCO₃)₂ D)CaCO₃

14. Elementlar miqdori: Ca-29,4%, H-0,735%, P-22,8%, O-47,06% bo'lgan birikmaning haqiqiy formulasini toping.

A)Ca₃(PO₄)₂ B)Ca(H₂PO₄)₂ C)CaHPO₄ D)Ca(OH)H₂PO₄

15. Birikma 52,94%-Al va 47,06%-O₂ dan iborat. Birikmaning molekulyar formulasini chiqaring.

A)Al₂O₃ B)AlO₂ C)AlO D)Al₃O₄

16. Birikma 2,04% H, 32,65% S va 65,3% O dan iborat. Murakkab moddaning formulasini toping.

A)H₂SO₃ B)H₂SO₄ C)H₂S₂O₃ D)H₂S

17. Tarkibida 3,06%-H, 31,63%-P va 65,3%-O bor. Shu moddani formulasini toping.

A)H₃PO₄ B)HPO₃ C)H₃PO₃ D)H₄P₂O₇

18. Birikma 21,21%-N, 6,06%-H, 24,24%-S, 48,48%-O dan iborat. Xaqiqiy formulasini toping.

A)(NH₄)₂SO₃ B)(NH₄)₂SO₄ C)NH₄SO₄ D)(NH₄)₂S₂O₃

19. Birikmada 38,71%-Ca, 20,0%-P va 41,29%-O dan tashkil topgan. Shu birikmaning formulasini toping.

A)Ca₃(PO₄)₂ B)CaPO₄ C)Ca(PO₃)₂ D)Ca₃(PO₃)₂

20. Birikmada 27,48% magniy, 23,66% fosfor va 48,85% kislorod bor. Birikmaning oddiy formulasini chiqaring.

A)Mg₃(PO₄)₂ B)MgPO₄ C)Mg(PO₃)₂ D)Mg₃(PO₃)₂

21. Tarkibida 16,08%-Me, 4,2%-C, 6,99%-H, 72,73%-O bor birikmaning formulasini toping.

A)Na₂CO₃·9H₂O B)Na₂CO₃·10H₂O C)Ca(HCO₃)₂ D)CaCO₃·H₂O

22. Tarkibida massa ulushlari quyidabicha 31,84%-Me, 39,18%-O, 28,98%-Cl, bo'lgan modaning formulasini toping.

A)KClO₃ B)NaClO₂ C)NaClO₃ D)LiClO₃

I. 11. Kristallgidratlar

I. 1. Na₂HPO₄·nH₂O da 11,57 % fosfor bor. Shu kristallogidrat tarkibidagi n ning qiymatini toping.

A)6 B)8 C)7 D)10

Yechish; 1-usul. 1) Na₂HPO₄·nH₂O molekulyar massasini topamiz.

$$\begin{array}{l} 142 \qquad 18n \\ 2) 11,57\% \text{ P} \text{ ————— } 31 \text{ gr bo'lsa} \\ 100\% \text{ da} \text{ ————— } x = \qquad x = \frac{31 \cdot 100}{11,57} = 268 \text{ gr} \end{array}$$

3) 268 gr kristalogidratning umumiy massasi undan Na_2HPO_4 ni massasini ayiramiz bunda H_2O massasi qoladi.

4) $268-142 = 126$ gr H_2O bo'ladi.

5) suvning massasini molekulyar massasiga bo'lsak moli kelib chiqadi.

$$n = \frac{\text{umumiy massa}}{\text{suv massasi}} = \frac{126}{18} = 7 \quad \text{J:Na}_2\text{HPO}_4 \cdot 7\text{H}_2\text{O}$$

2-usul. Tenglama bo'yicha hisoblash.

1) $\text{Na}_2\text{HPO}_4 \cdot n\text{H}_2\text{O}$

142 18n umumiy massa

$$2) \frac{\text{P massasi}}{\text{umumiy massa}} = \frac{31}{142+18n} = \frac{11,57}{100}$$

$$3) (31 \cdot 100) = (142 + 18n) \cdot 11,57$$

$$3100 = 1642,94 + 208,26n$$

$$3100 - 1642,94 = 208,26n$$

$$1457,06 = 208,26n$$

$$n = \frac{1457,06}{208,26} = 7 \quad \text{J:Na}_2\text{HPO}_4 \cdot 7\text{H}_2\text{O}$$

2. $\text{CuSO}_4 \cdot n\text{H}_2\text{O}$ tarkibida 12,8% S bo'lsa shu kristalogidrat tarkibidagi n ni toping.

A)4 B)6 C)5 D)7

3. Kristal so'da tarkibida 4,2% C bo'lsa, unda necha molekula suv bo'ladi.

A)7 B)10 C)8 D)9

4. $\text{FeSO}_4 \cdot n\text{H}_2\text{O}$ kristalogidrat tarkibida 11,51% S bo'lsa n ni toping.

A)5 B)6 C)8 D)7

5. Gips tarkibida 18,6% S bo'lsa necha molekula suv bo'ladi.

A)0,5 B)2 C)5 D)

6. $\text{Na}_2\text{CO}_3 \cdot n\text{H}_2\text{O}$ tarkibli kristalogidrat tarkibida 17,16% Na bo'lsa n ni qiymatini toping.

A)9 B)8 C)10 D)7

7. Quyidagi kristalogidrat tarkibida $\text{CuSO}_4 \cdot n\text{H}_2\text{O}$ 25,6% Cu bo'lsa shu kristalogidrat tarkibida necha molekula suv bo'ladi.

A)4 B)3 C)7 D)5

8. $\text{CaSO}_4 \cdot n\text{H}_2\text{O}$ tarkibida 22,07% oltingugurt bo'lsa suv molekularini toping.

A)1,5 B)0,5 C)2 D)3

9. Rux kuparosi tarkibida 22,65% Zn bo'lsa rux kuporosida necha molekula suv bo'ladi.

A)7 B)6 C)8 D)9

10. Glauber tuzi deb ataladigan tuz $\text{Na}_2\text{SO}_4 \cdot n\text{H}_2\text{O}$ tarkibida natriyning massa ulushi 16,08% ga teng. Bu tuz tarkibida necha mol suv bor.

A)6 B)8 C)10 D)12

11. Magniy kuporosi $\text{MgSO}_4 \cdot n\text{H}_2\text{O}$ tarkibida magniyning massa ulushi 11,42% ga teng. n ning qiymatini toping.

A)4 B)5 C)6 D)7

12. $\text{MgSO}_4 \cdot n\text{H}_2\text{O}$ tarkibida oltingugurtning massa ulushi 13% ga teng bo'lsa, n ning qiymati qancha bo'ladi.

A)7 B)8 C)5 D)1

13. Temir (III)-sulfat $\text{Fe}_2(\text{SO}_4)_3 \cdot n\text{H}_2\text{O}$ tarkibida oltingugurt bilan temirning massa ulushi 37,0% ga teng bo'lsa, n ning qiymati qancha bo'ladi.

A)8 B)10 C)12 D)9

14. Alyuminiy sulfat kristallgidrati $\text{Al}_2(\text{SO}_4)_3 \cdot n\text{H}_2\text{O}$ tarkibida alyuminiyning massa ulushi 9,67% ga teng bo'lsa, n ning qiymati qancha bo'ladi.

A)10 B)12 C)16 D)16

15. Alyuminiy nitrat kristallgidrati $\text{Al}(\text{NO}_3)_3 \cdot n\text{H}_2\text{O}$ tarkibida azotning massa ulushi 0,1239 ga teng bo'lsa, n ning qiymati qancha bo'ladi.

A)6 B)7 C)8 D)9

16. Bura (tanakor) deb ataluvchi $\text{Na}_2\text{B}_4\text{O}_7 \cdot n\text{H}_2\text{O}$ tarkibida borning massa ulushi 0,1606 ga teng bo'lsa, n ning qiymati qancha bo'ladi.

A)2 B)4 C)6 D)8

17. MgSO_4 ning taxir tuz deb nomlanuvchi kristallgidrati tarkibida 51,22% suv bo'lsa, shu kristallgidrat $\text{MgSO}_4 \cdot n\text{H}_2\text{O}$ dagi n ni toping.

A)2 B)3 C)4 D)7

18. Alyuminiy sulfat kristallgidrati tarkibidagi alyuminiyning massa ulushi 8,1% ga teng bo'lsa, kristallgidrat tarkibidagi suvning mollar sonini aniqlang.

A)6 B)9 C)12 D)18

19. Temir kuporosi tarkibidagi oltingugurtning massa ulushi 11,50% ni tashkil etsa kristallogidratdagi n ning qiymatini toping.

A)7 B)10 C)4 D)12

20. Marganets (II)-sulfat kristallgidrati tarkibida 24,66% marganes bo'lsa, uning formulasi qanday bo'ladi.

A) $\text{MnSO}_4 \cdot \text{H}_2\text{O}$ B) $\text{MnSO}_4 \cdot 3\text{H}_2\text{O}$ C) $\text{MnSO}_4 \cdot 4\text{H}_2\text{O}$ D) $\text{MnSO}_4 \cdot 5\text{H}_2\text{O}$

25. $\text{Fe}_2(\text{SO}_4)_3 \cdot n\text{H}_2\text{O}$ kristallogidratdagi kislorodning massa ulushi 62,33% bo'lsa, n ning qiymatini aniqlang.

A)9 B)8 C)20 **D)12**

26. $\text{CaSO}_4 \cdot n\text{H}_2\text{O}$ tarkibli kristallogidrat tarkibida 2,32% H_2 bo'lsa, n ni toping.

A)2 B)0,5 C)1,5 D)3

27. $\text{FeSO}_4 \cdot n\text{H}_2\text{O}$ kristallogidrat tarkibida 63,3% O_2 bo'lsa, necha molekula suv bor.

A)8 B)5 **C)7** D)6

28. $\text{Na}_2\text{HPO}_4 \cdot n\text{H}_2\text{O}$ da 3,57 % vodorod bor. shu kristallogidrat tarkibidagi n ning qiymatini toping.

A)3 B)2 C)4 D)6

29. Bura (tanakor) deb ataluvchi $\text{Na}_2\text{B}_4\text{O}_7 \cdot n\text{H}_2\text{O}$ tarkibida kislorodning massa ulushi 0,727 ga teng bo'lsa, n ning qiymati qancha bo'ladi.

A)11 **B)12** C)4 D)10

30. $\text{CaSO}_4 \cdot n\text{H}_2\text{O}$ tarkibli kristallogidrat tarkibida 58,95% O_2 bo'lsa, n ni toping.

A)2 B)0,5 C)1,5 **D)3**

31. Alyuminiy nitrat kristallogidrati $\text{Al}(\text{NO}_3)_3 \cdot n\text{H}_2\text{O}$ tarkibida kislorodning massa ulushi 0,7298 ga teng bo'lsa, n ning qiymati qancha bo'ladi.

A)3 B)12 **C)4** D)6

32. Temir (III)-sulfat $\text{Fe}_2(\text{SO}_4)_3 \cdot n\text{H}_2\text{O}$ tarkibida kislorodning massa ulushi 57,79% ga teng bo'lsa, n ning qiymati qancha bo'ladi.

A)7 B)5 C)8 D)9

33. Taxir tuzi deb ataluvchi kristallogidrat tarkibida O_2 ning massa ulushi 72,54% bo'lsa, shu tuzni tarkibidagi H_2O miqdorini toping.

A)6 **B)7** C)5 D)9

34. $\text{Na}_2\text{SO}_4 \cdot n\text{H}_2\text{O}$ kristallogidrat tarkibida 67,13% O_2 bo'lsa, n ni toping.

A)10 B)9 **C)8** D)7

Abituriyentlarimiz diqqatiga Nobel repetitorlik o'quv markazimizga taklif qilamiz. Manzil Farg'ona viloyati Bog'dod tumani markazidagi 6-bog'cha yonginasida.

JAVOBLAR

Oksidlarning nisbiy molekulyar massasi va atomlar sonini toppish

№	Oksid nomi	Yozilishi	Molekulyar massa (Mr)	Atomlar soni
61.	O'zgarmas valentli element oksidlari Vodorod oksidi	H ₂ O	18	3
62.	Litiy oksidi	Li ₂ O	30	3
63.	Natriy oksidi	Na ₂ O	62	3
64.	Kaliy oksidi	K ₂ O	94	3
65.	Rubidiy oksidi	Rb ₂ O	186	3
66.	Seziy oksidi	Cs ₂ O	282	3
67.	Kumush oksidi	Ag ₂ O	232	3
68.	Fransiy oksidi	Fr ₂ O	462	3
69.	Magniy oksidi	MgO	40	2
70.	Berilliy oksidi	BeO	25	2
71.	Kalsiy oksidi	CaO	56	2
72.	Rux oksidi	ZnO	81	2
73.	Kadmiy oksidi	CdO	128	2
74.	Stronsiy oksidi	SrO	104	2
75.	Bariy oksidi	BaO	153	2
76.	Bor oksidi	B ₂ O ₃	70	5
77.	Aluminiy oksidi	Al ₂ O ₃	102	5
78.	O'zgaruvchan valentli element oksidlari			
79.	Mis (I) oksidi	Cu ₂ O	144	3
80.	Mis (II) oksidi	CuO	80	2
81.	Oltin (I) oksidi	Au ₂ O	410	3
82.	Oltin (III) oksidi	Au ₂ O ₃	442	5
83.	Simob (I) oksidi	Hg ₂ O	418	3
84.	Simob (II) oksidi	HgO	217	2
85.	Uglerod (II) oksidi	CO	28	2
86.	Uglerod (IV) oksidi	CO ₂	44	3
87.	Kremniy (II) oksidi	SiO	44	2
88.	Kremniy (IV) oksidi	SiO ₂	60	3
89.	Qalay (II) oksidi	SnO	135	2
90.	Qalay (IV) oksidi	SnO ₂	151	3
91.	Qo'rg'oshin (II) oksidi	PbO	223	2
92.	Qo'rg'oshin (IV) oksidi	PbO ₂	239	3
93.	Azot (I) oksidi	N ₂ O	44	3
94.	Azot (II) oksidi	NO	30	2
95.	Azot (III) oksidi	N ₂ O ₃	76	5
96.	Azot (IV) oksidi	NO ₂	46	3
97.	Azot (V) oksidi	N ₂ O ₅	108	7
98.	Posfor (III) oksidi	P ₂ O ₃	110	5

99.	Posfor (V) oksidi	P ₂ O ₅	142	7
100.	Oltinugurt (II) oksidi	SO	48	2
101.	Oltinugurt (IV) oksidi	SO ₂	64	3
102.	Oltinugurt (VI) oksidi	SO ₃	80	4
103.	Xrom (II) oksidi	CrO	68	2
№	Oksid nomi	Yozilishi	Molekulyar massa (Mr)	Atomlar soni
104.	Xrom (III) oksidi	Cr ₂ O ₃	152	5
105.	Xrom (VI) oksidi	CrO ₃	100	4
106.	Xlor (I) oksidi	Cl ₂ O	87	3
107.	Xlor (III) oksidi	Cl ₂ O ₃	119	5
108.	Xlor (V) oksidi	Cl ₂ O ₅	151	7
109.	Xlor (VII) oksidi	Cl ₂ O ₇	183	9
110.	Brom (I) oksidi	Br ₂ O	176	3
111.	Brom (III) oksidi	Br ₂ O ₃	208	5
112.	Brom (V) oksidi	Br ₂ O ₅	240	7
113.	Brom (VII) oksidi	Br ₂ O ₇	272	9
114.	Temir (II) oksidi	FeO	72	2
115.	Temir (III) oksidi	Fe ₂ O ₃	160	5
116.	Marganets (II) oksidi	MnO	71	2
117.	Marganets (III) oksidi	Mn ₂ O ₃	158	5
118.	Marganets (IV) oksidi	MnO ₂	87	3
119.	Marganets (VI) oksidi	MnO ₃	103	4
120.	Marganets (VII) oksidi	Mn ₂ O ₇	222	9

Asoslarning nisbiy molekulyar massasi va atomlar sonini topish

№	Asoslar nomi	Yozilishi	Molekulyar massa (Mr)	Atomlar soni
16.	O'zgarmas valentli element asoslari			
17.	Litiy gidroksid	LiOH	24	3
18.	Natriy gidroksid	NaOH	40	3
19.	Kaliy gidroksid	KOH	56	3
20.	Rubidiy gidroksid	RbOH	102	3
21.	Seziy gidroksid	CsOH	150	3
22.	Kumush gidroksid	AgOH	125	3
23.	Magniy gidroksid	Mg(OH) ₂	58	5
24.	Berilliy gidroksid	Be(OH) ₂	43	5
25.	Kalsiy gidroksid	Ca(OH) ₂	74	5
26.	Rux gidroksid	Zn(OH) ₂	99	5
27.	Kadmiy gidroksid	Cd(OH) ₂	146	5
28.	Stronsiy gidroksid	Sr(OH) ₂	122	5
29.	Bariy gidroksid	Ba(OH) ₂	171	5
30.	Aluminiy gidroksid	Al(OH) ₃	78	7

O'rta tuzlarning nisbiy molekulyar massasi va bog'lar sonini topish

№	Tuzlarning nomi	Yozilishi	Molekulyar massa (Mr)	Bog'lar soni σ - va π - bog'lar
1.	I valentli metallarning o'rta tuzlari			
2.	Litiy xlorid	LiCl	42,5	1- σ
3.	Litiy sulfid	Li₂S	46	
4.	Natriy sulfid	Na₂S	78	
5.	Natriy xlorid	NaCl	58,5	
6.	Natriy gipoxlorid	NaClO	74,5	
7.	Kaliy gipoxlorid	KClO	90,5	
8.	Natriy xlorit	NaClO₂	90,5	
9.	Kaliy xlorit	KClO₂	106,5	
10.	Litiy xlorat	LiClO₃	90,5	
11.	Natriy xlorat	NaClO₃	106,5	
12.	Kumush sulfid	Ag₂S	248	
13.	Litiy perxlorat	LiClO₄	106,5	
14.	Natriy sulfit	Na₂SO₃	126	
15.	Kaliy sulfat	K₂SO₄	174	
16.	Natriy nitrat	NaNO₃	85	
17.	Litiy nitrit	LiNO₂	53	
18.	Litiy tiosulfat	Li₂S₂O₃	126	
19.	Litiy persulfat	Li₂S₂O₈	206	
20.	Natriy tiosulfat	Na₂S₂O₃	158	6- σ, 2- π
21.	Natriy piro-sulfat	Na₂S₂O₇	222	
22.	Natriy persulfat	Na₂S₂O₈	238	11- σ, 4- π
23.	Kaliy sianid	KCN	65	
24.	Natriy ftarid	NaF	42	
25.	Kaliy xromat	K₂CrO₄	194	
26.	Litiy dixromat	Li₂Cr₂O₇	230	
27.	Natriy xromat	Na₂CrO₄	162	
28.	Kumush dixromat	Ag₂Cr₂O₇	432	
29.	Litiy manganat	Li₂MnO₄	133	
30.	Natriy manganat	Na₂MnO₄	165	
31.	Kaliy permanganat	KMnO₄	158	
32.	Natriy permanganat	NaMnO₄	142	
33.	Litiy metafosfit	LiPO₂	70	
34.	Litiy metafosfat	LiPO₃	86	
35.	Litiy fosfit	Li₂HPO₃	94	
36.	Natriy fosfit	Na₂HPO₃	126	
37.	Natriy fosfat	Na₃PO₄	164	
38.	Natriy metafosfit	NaPO₂	86	

39.	Kaliy metafosfat	KPO_3	118	
40.	Natriy gipofosfit	NaH_2PO_2	88	
41.	Kaliy gipofosfit	KH_2PO_2	104	
42.	Litiy pirofosfat	$Li_4P_2O_7$	202	
43.	Natriy pirofosfat	$Na_4P_2O_7$	266	
44.	Kumush fosfat	Ag_3PO_4	419	
№	Tuzlarning nomi	Yozilishi	Molekulyar massa (Mr)	Bog'lar soni σ- va π-bog'lar
45.	Litiy silikat	Li_2SiO_3	90	
46.	Natriy silikat	Na_2SiO_3	122	
47.	Kaliy metaaluminat	$KAlO_2$	98	
48.	Natriy aluminat	Na_3AlO_3	144	
49.	Natriy karbonat	Na_2CO_3	106	
50.	Natriy borat	Na_3BO_3	128	
51.	Natriy metaborat	$NaBO_3$	82	
52.	II valentli metallarning o'rta tuzlari			
53.	Kalsiy xlorid	$CaCl_2$	111	
54.	Magniy xlorit	$MgCl_2$	95	
55.	Kalsiy xlorit	$Ca(ClO_2)_2$	175	
56.	Rux xlorat	$Zn(ClO_3)_2$	232	
57.	Bariy xlorat	$Ba(ClO_3)_2$	304	
58.	Rux sulfid	ZnS	97	
59.	Kalsiy perxlorat	CaS_2O_8	232	
60.	Kalsiy sulfit	$CaSO_3$	120	
61.	Kadmiy sulfat	$CdSO_4$	208	
62.	Bariy nitrat	$Ba(NO_3)_2$	261	
63.	Kalsiy nitrit	$Ca(NO_3)_2$	164	
64.	Rux sulfid	ZnS	97	
65.	Magniy xlorid	$MgCl_2$	95	
66.	Kalsiy gipoxlorid	$Ca(ClO)_2$	143	
67.	Bariy gipoxlorid	$Ba(ClO)_2$	240	
68.	Magniy tiosulfat	MgS_2O_3	136	
69.	Kalsiy persulfat	CaS_2O_8	232	
70.	Bariy tiosulfat	BaS_2O_3	249	
71.	Rux piro-sulfat	ZnS_2O_7	241	
72.	Magniy persulfat	MgS_2O_8	216	
73.	Kalsiy sianid	$Ca(CN)_2$	92	
74.	Bariy ftarid	BaF_2	175	
75.	Rux xromat	$ZnCrO_4$	181	
76.	Magniy dixromat	$MgCr_2O_7$	128	
77.	Kalsiy xromat	$CaCrO_4$	156	
78.	Bariy dixromat	$BaCrO_4$	253	
79.	Magniy manganat	$MgMnO_4$	143	
80.	Kalsiy manganat	$CaMnO_4$	159	
81.	Rux permanganat	$Zn(MnO_4)_2$	303	
82.	Bariy permanganat	$Ba(MnO_4)_2$	375	
83.	Kalsiy metafosfit	$Ca(PO_2)_2$	166	

84.	Magniy metafosfat	$Mg(PO_3)_2$	182	
85.	Rux fosfit	$ZnHPO_3$	145	6- σ, 1- π
86.	Bariy fosfit	$BaHPO_3$	217	
87.	Kalsiy fosfat	$Ca_3(PO_4)_2$	310	
88.	Magniy metafosfit	$Mg(PO_2)_2$	150	
89.				
№	Tuzlarning nomi	Yozilishi	Molekulyar massa (Mr)	Bog'lar soni σ- va π-bog'lar
90.	Rux metafosfat	$Zn(PO_3)_2$	223	
91.	Bariy gipofosfit	$Ba(H_2PO_2)_2$	267	10- σ, 2- π
92.	Kalsiy gipofosfit	$Ca(H_2PO_2)_2$	170	
93.	Magniy pirofosfat	$Mg_2P_2O_7$	222	
94.	Rux pirofosfat	$Zn_2P_2O_7$	304	
95.	Bariy fosfat	$Ba_3(PO_4)_2$	601	
96.	Kalsiy silikat	$CaSiO_3$	116	
97.	Magniy silikat	$MgSiO_3$	100	
98.	Kalsiy karbonat	$CaCO_3$	100	
99.	Magniy borat	$Mg_3(BO_3)_2$	190	
100.	III valentli metallarning o'rta tuzlari			
101.	Aluminiy xlorid	$AlCl_3$	133,5	
102.	Aluminiy xlorit	$Al(ClO_2)_3$	229,5	
103.	Aluminiy xlorat	$Al(ClO_3)_3$	277,5	
104.	Aluminiy sulfid	Al_2S_3	150	
105.	Aluminiy perxlorat	$Al(ClO_4)_3$	325,5	
106.	Aluminiy sulfit	$Al_2(SO_3)_3$	294	
107.	Aluminiy sulfat	$Al_2(SO_4)_2$	246	
108.	Aluminiy nitrat	$Al(NO_3)_3$	213	
109.	Aluminiy nitrit	$Al(NO_2)_3$	165	
110.	Aluminiy gipoxlorid	$Al(ClO)_3$	181,5	
111.	Aluminiy persulfat	$Al_2(P_2O_8)_3$	624	
112.	Aluminiy tiosulfat	$Al_2(S_2O_3)_3$	390	
113.	Aluminiy piro-sulfat	$Al_2(P_2O_7)_3$	576	
114.	Aluminiy sianid	$Al(CN)_3$	105	
115.	Aluminiy ftarid	AlF_3	84	
116.	Aluminiy xromat	$Al_2(CrO_4)_3$	402	
117.	Aluminiy dixromat	$Al_2(Cr_2O_7)_3$	702	
118.	Aluminiy manganat	$Al_2(MnO_4)_3$	411	
119.	Aluminiy permanganat	$Al(MnO_4)_3$	384	
120.	Aluminiy metafosfit	$Al(PO_2)_3$	216	
121.	Aluminiy metafosfat	$Al(PO_3)_3$	264	
122.	Aluminiy fosfit	$Al_2(HPO_3)_3$	294	18- σ, 3- π
123.	Aluminiy fosfat	$AlPO_4$	122	
124.	Aluminiy gipofosfit	$Al(H_2PO_2)_3$	222	15- σ, 3- π
125.	Aluminiy pirofosfat	$Al_4(P_2O_7)_3$	630	
126.	Aluminiy silikat	$Al_2(SiO_3)_3$	282	
127.	Aluminiy karbonat	$Al_2(CO_3)_3$	234	

128.	Aluminiy borat	AlBO ₃	86	
129.	Aluminiy metaborat	Al(BO ₃) ₃	204	
130.	O'zgaruvchan valentli metallarning o'rta tuzlari			
131.	Temir (II) xlorid	FeCl ₂	127	
132.	Temir (II) xromat	FeCrO ₄	172	
133.	Mis (II) dixromat	CuCr ₂ O ₇	280	
134.	Temir (III) xromat	Fe ₂ (CrO ₄) ₃	460	
135.	Mis(II) sulfat	CuSO ₄	160	
136.	Marganets (II) sulfat	MnSO ₄	151	
137.	Qo'rg'oshin (II) sulfid	PbS	239	
138.	Mis (II) nitrat	Cu(NO ₃) ₂	188	
139.	Temir (II) fosfat	Fe ₃ (PO ₄) ₂	358	
140.	Mis (II) karbonat	CuCO ₃	124	
141.	Simob (II) sulfid	HgS	233	
142.	Temir (III) silikat	Fe ₂ (SiO ₃) ₃	340	

