

~1.

$$Mr(C_5Al(SO_4)_2 \cdot 12H_2O) = 132 + 27 + (32 \cdot 2 + 16 \cdot 8) + 12 \cdot 2 + 12 \cdot 16 = 567$$

$$= 159 + 64 + 128 + 24 + 192 = 567$$

$$\text{мемал } W(\underline{Cs}) = \frac{132}{567} \cdot 100\% = 23,28\% \quad 1,5$$

$$\text{мемал } W(\underline{Al}) = \frac{27}{567} \cdot 100\% = 4,76\% \quad 1,5$$

$$W(S) = \frac{32 \cdot 2}{567} \cdot 100\% = 11,28\%$$

$$W(O) = \frac{16 \cdot 8 + 16 \cdot 12}{567} \cdot 100\% = 56,43\%$$

$$W(H) = \frac{12 \cdot 2}{567} \cdot 100\% = 4,2\%$$

$$Mr(Cr_2S_3) = 52 \cdot 2 + 32 \cdot 3 = 200$$

$$\text{мемал } W(\underline{Cr}) = \frac{52 \cdot 2}{200} \cdot 100\% = 52\% \quad 1,5$$

$$W(S) = \frac{32 \cdot 3}{200} \cdot 100\% = 48\%$$

$$Mr(\underline{SrAl_2O_4}) = 88 + 27 \cdot 2 + 16 \cdot 4 = 206$$

$$\text{мемал } W(\underline{Sr}) = \frac{88}{206} \cdot 100\% = 42,7\% \quad 1,5$$

$$\text{мемал } W(\underline{Al}) = \frac{27 \cdot 2}{206} \cdot 100\% = 26,2\% \quad 1,5$$

$$W(O) = \frac{16 \cdot 4}{206} \cdot 100\% = 31\%$$

$$Mr(Y_3Al_5O_{12}) = 89 \cdot 3 + 27 \cdot 5 + 16 \cdot 12 = 594$$

$$\text{мемал } W(\underline{Y}) = \frac{89 \cdot 3}{594} \cdot 100\% = 44,9\% \quad 1,5$$

$$\text{мемал } W(\underline{Al}) = \frac{27 \cdot 5}{594} \cdot 100\% = 22,7\% \quad 1,5$$

$$W(O) = \frac{16 \cdot 12}{594} \cdot 100\% = 32,3\%$$

$$23,28\% + 4,76\% + 11,28\% + 56,43\% + 4,2\% = 99\%$$

1	2	3	4	5
15	3	6	19	20

итого: 635

$$52\% + 48\% = 100\%$$

$$42,7\% + 26,2\% + 31\% = 99\%$$

$$44,9\% + 22,7\% + 32,3\% = 99\%$$

см. на обратной стороне

$$Mr(K_2(VO_2)_2(VO_4)_2) = 39 \cdot 2 + 238 \cdot 2 + 16 \cdot 4 + 51 \cdot 2 + 16 \cdot 8 = 848$$

$$w(K) = \frac{39 \cdot 2}{848} \cdot 100\% = 9,1\%$$

$$w(V) = \frac{238 \cdot 2}{848} \cdot 100\% = 56,1\%$$

$$w(O) = \frac{16 \cdot 4 + 16 \cdot 8}{848} \cdot 100\% = 22,6\%$$

$$w(V) = \frac{51 \cdot 2}{848} \cdot 100\% = 12\%$$

$$9,1\% + 56,1\% + 22,6\% + 12\% = 99\%$$

Менее 2 и 3

$$1. 1s^2 2s^2 2p^6 3s^2 3p^6 3d^9$$

$$2+2+6+2+6+9=27$$

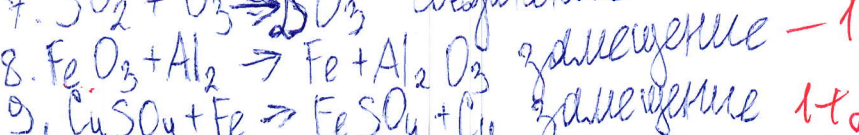
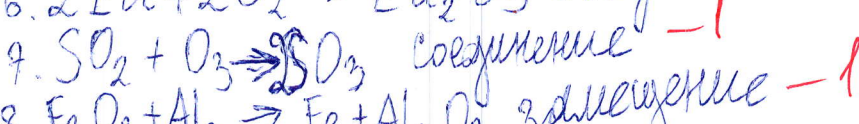
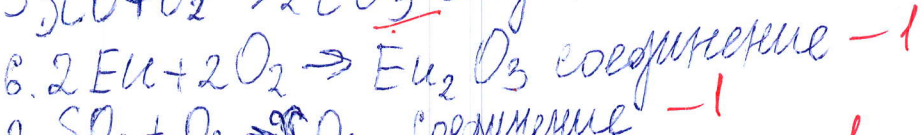
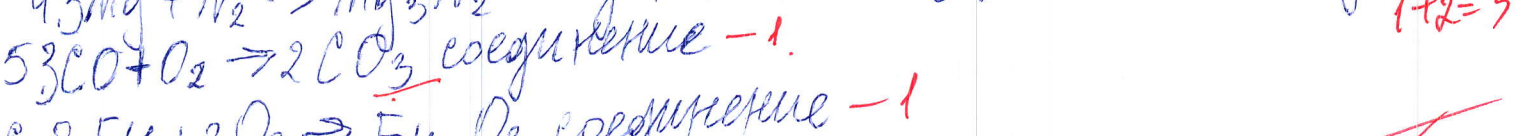
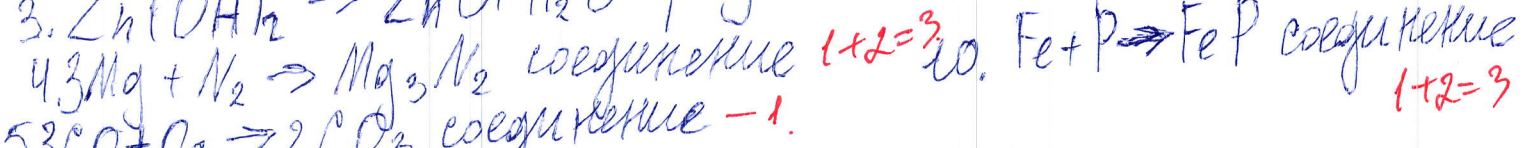
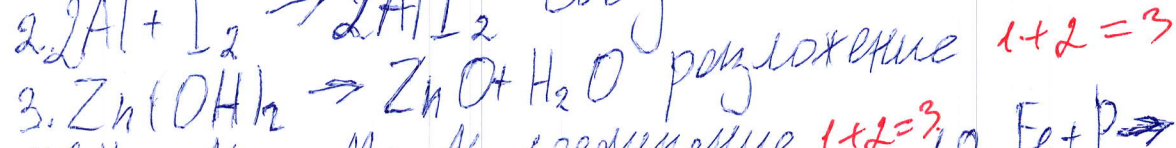
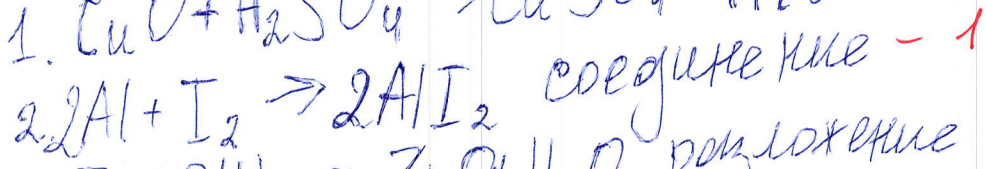
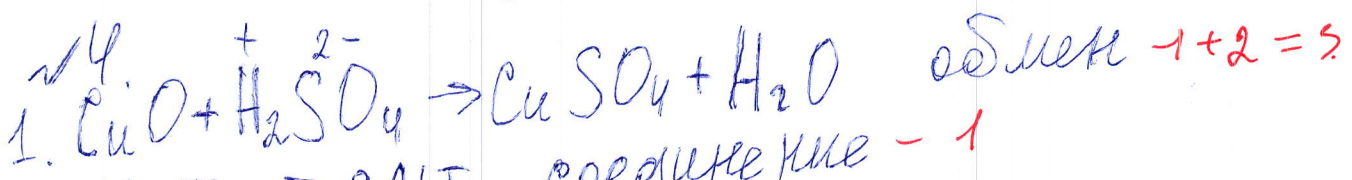
в эту конфигурацию подходит Co, но т.к. ион металла, входящий в состав кристаллогидрата, то это Cu^{2+} ($-29e + 2e = -27e$)

$CuSO_4 \cdot 5H_2O$ - кристаллогидрат голубого цвета

$$2. M(CuSO_4 \cdot 5H_2O) = 64 + 32 + 16 \cdot 4 + 5 \cdot 2 + 5 \cdot 16 = 250$$

$$\frac{m}{Mr} = \frac{3}{250} = 0,012 \text{ моль}$$

Ответ: 0,012 моль



195

№5.

$$S_8 = -16 \bar{e} \cdot 8 = -128 \bar{e} - 2$$

$$C_e^{3+} = -140 \bar{e} - 3 \bar{e} = -137 \bar{e} - 58 \bar{e} - 3 \bar{e} = -55 \bar{e} - 2$$

$$NO_2 = -14 \bar{e} + (-8 \bar{e} \cdot 2) - 7 \bar{e} + (-8 \bar{e} \cdot 2) = -23 \bar{e} - 2$$

$$C_{60} = -6 \bar{e} \cdot 60 = -360 \bar{e} - 2$$

$$O_5 O_4 = -76 \bar{e} + (-8 \bar{e} \cdot 4) = -108 \bar{e} - 2$$

$$TiO_2 = -22 \bar{e} + (-8 \bar{e} \cdot 2) = -38 \bar{e} - 2$$

$$SiH_4 = -14 \bar{e} + (-1 \bar{e} \cdot 4) = -18 \bar{e} - 2$$

$$Eu^{2+} = -63 \bar{e} - 2 \bar{e} = -61 \bar{e} - 2$$

$$He^{2+} = -2 \bar{e} - 2 \bar{e} = 0 \bar{e} - 2$$

$$VO_2^+ = -23 \bar{e} + (-8 \bar{e} \cdot 2 - 1 \bar{e}) = -38 \bar{e} - 2$$

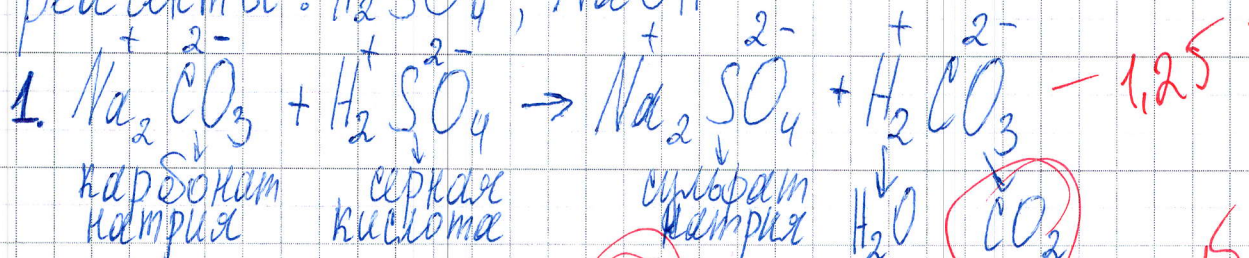
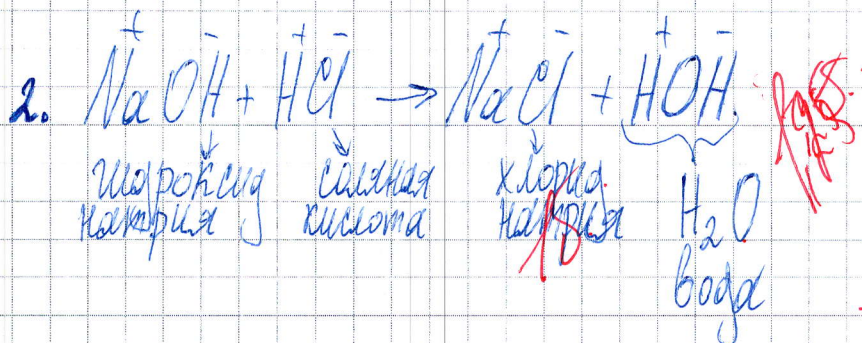
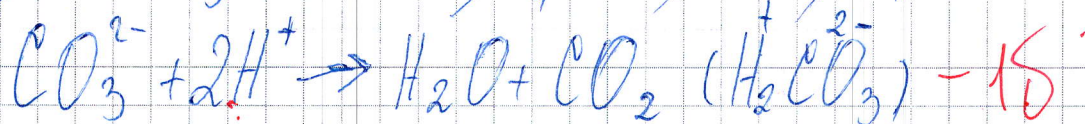
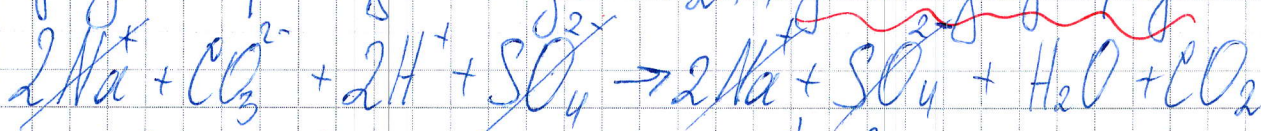
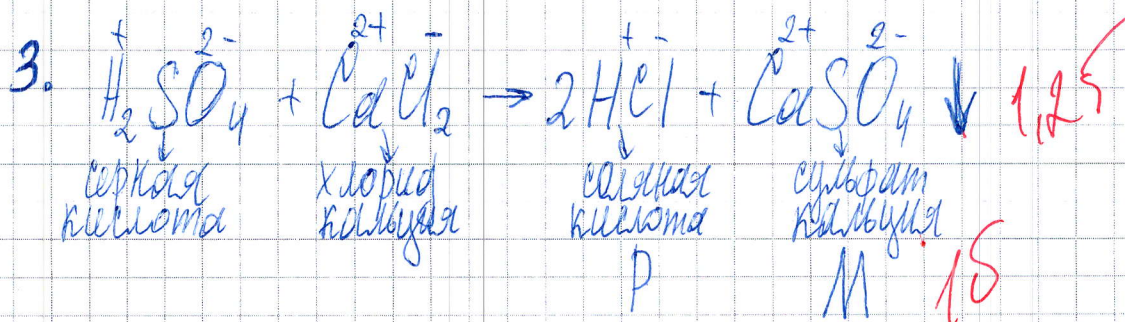
№3.

3. X-элемент (C)

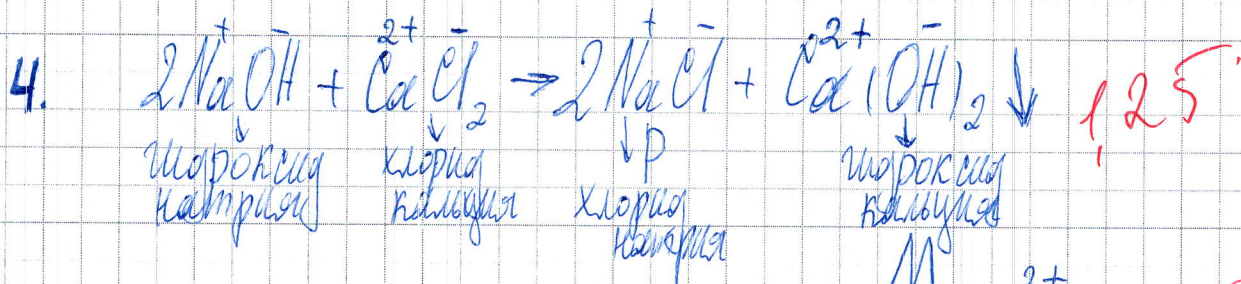
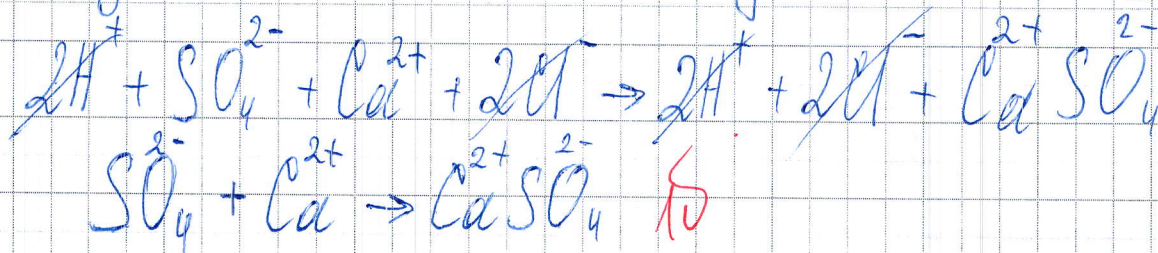
$$Mr(C) = 12$$

60

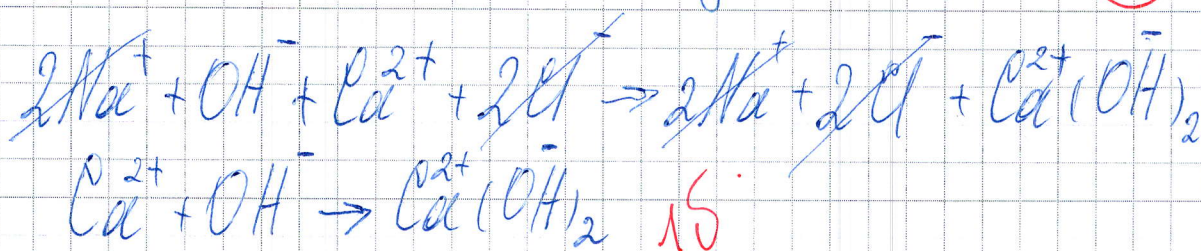
Дано:

реактивы: $\overset{+}{\text{Na}}_2\overset{2-}{\text{CO}}_3$, $\overset{+}{\text{Na}}\overset{-}{\text{Cl}}$, $\overset{+}{\text{H}}\overset{-}{\text{Cl}}$, $\overset{2+}{\text{Ca}}\overset{2-}{\text{Cl}}_2$ реагенты: $\overset{+}{\text{H}}_2\overset{2-}{\text{SO}}_4$, $\overset{+}{\text{Na}}\overset{-}{\text{OH}}$ признак реакции (CO_2), диоксид углеродаитого: $55 + 55 + 15 \times 35 = 225$ признак реакции воды (H_2O) (20)

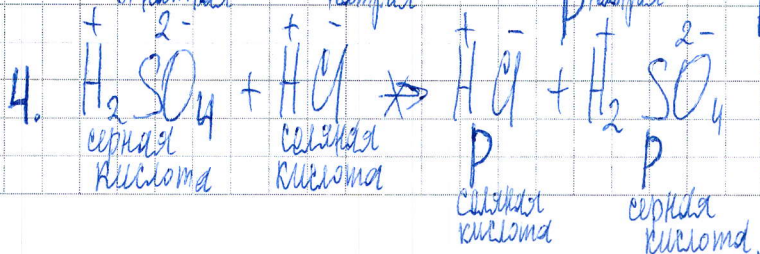
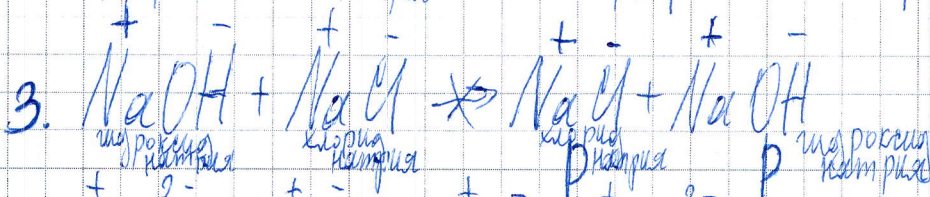
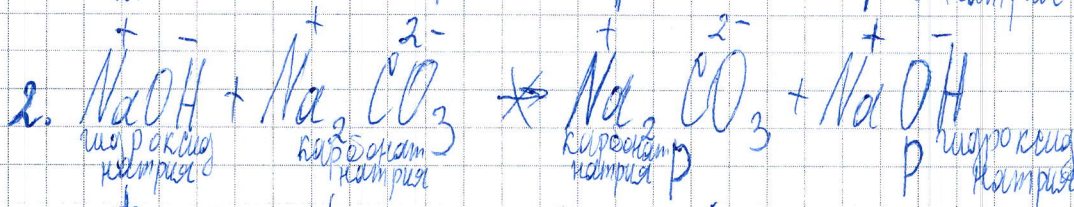
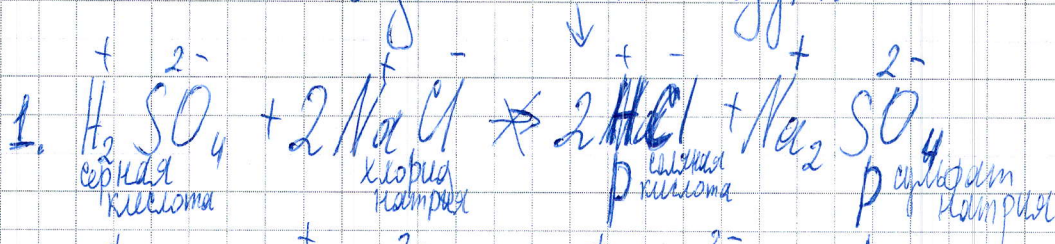
признак реакции белый осадок ($\text{Ca}^{2+}\text{SO}_4^{2-}$) 2.5



признак реакции белый осадок ($\text{Ca}^{2+}(\text{OH})_2$) 2.5



вещества не идут.



мем 3 уз 3

раствор	Na_2CO_3	NaCl	HCl	CaCl_2
H_2SO_4	+	—	—	+
NaOH	—	—	+	+

раз

Сильный
осадок

бесцвет

Сильный
осадок