

Олимпиадная работа
по химии
ученицы 9^А класса
Токовой Анна.

Шест.

- 1) - 3 4) - 3 7) - 2
2) - 1 5) - 3
3) - 2 6) - 4

(65)

Задачи.

№1.

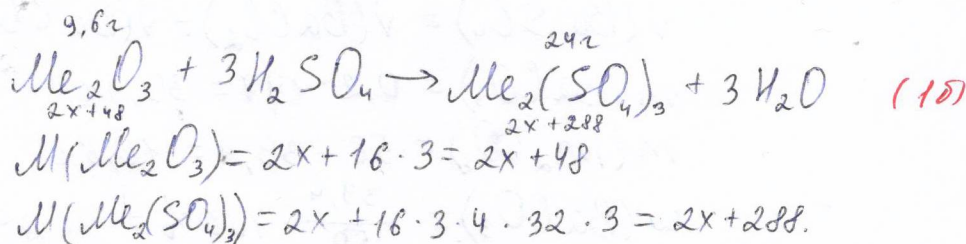
Дано:

$$m(\text{Me}_2\text{O}_3) = 9,62$$

$$m(\text{Me}_2(\text{SO}_4)_3) = 242$$

Me - ?

Решение:



$$\frac{9,6}{2x + 48} = \frac{24}{2x + 288}$$

$$9,6(2x + 288) = 24(2x + 48)$$

$$19,2x + 2764,8 = 48x + 1152$$

$$2764,8 - 1152 = 48x - 19,2x$$

$$\left(\begin{array}{l} 1612,8 = 28,8x \\ 56 = x \end{array} \right) \quad \begin{array}{l} 28,8x = 1612,8 \\ x = 56 \end{array}$$

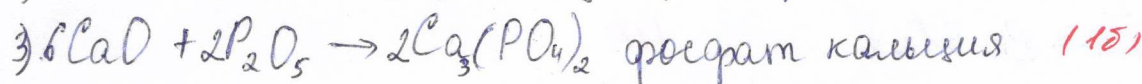
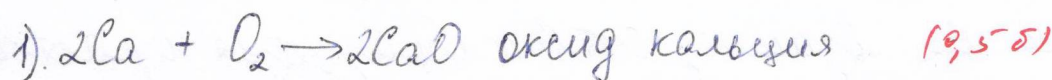
(25)

(35)

Ответ: Fe

№2.

Дано: Ca, P, O₂.



(25)

№3.

Дано:

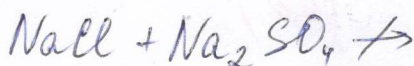
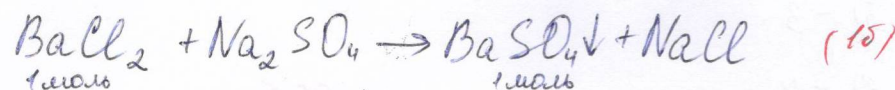
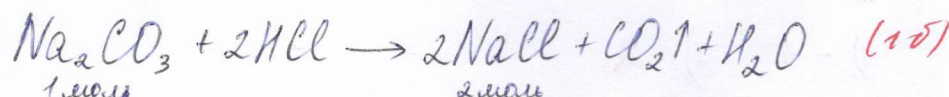
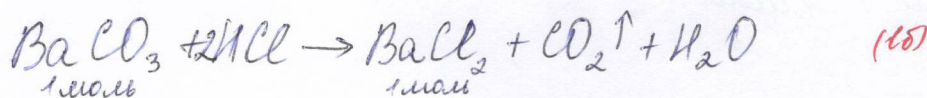
$$m_{\text{меси}} = 50 \text{ г}$$

$$m_{\text{осадка}} = 46,6 \text{ г}$$

$$\omega(\text{BaCO}_3) = ?$$

$$\omega(\text{Na}_2\text{CO}_3) = ?$$

Решение:



$$\nu = \frac{m}{M}; \quad \omega = \frac{m_{\text{в-ва}}}{m_{\text{р-ра}}} \cdot 100\%$$

$$\nu(\text{BaSO}_4) = \frac{46,6}{233} = 0,2 \text{ моль}$$

$$\nu(\text{BaSO}_4) = \nu(\text{BaCl}_2) = \nu(\text{BaCO}_3) \quad (10)$$

$$m(\text{BaCO}_3) = 0,2 \cdot 197 = 39,4 \text{ г} \quad (10)$$

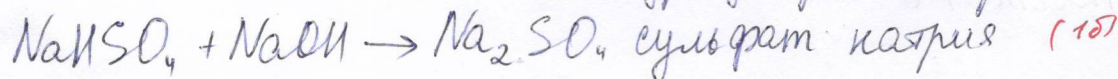
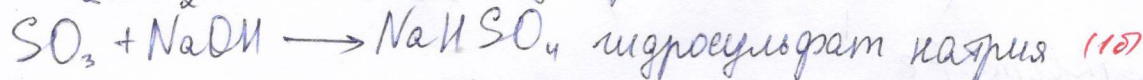
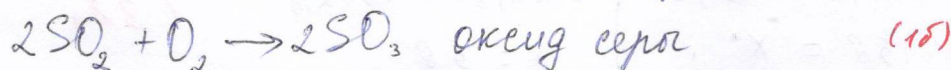
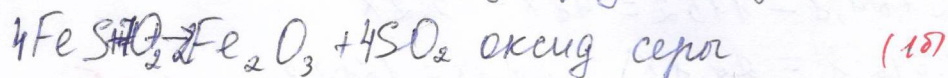
$$m(\text{Na}_2\text{CO}_3) = 50 - 39,4 = 10,6 \text{ г}$$

$$\omega(\text{BaCO}_3) = \frac{39,4}{50} \cdot 100\% = 78,8\% \quad (10)$$

$$\omega(\text{Na}_2\text{CO}_3) = 100\% - 78,8\% = 21,2\% \quad (10)$$

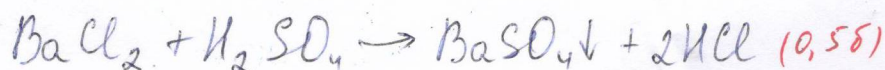
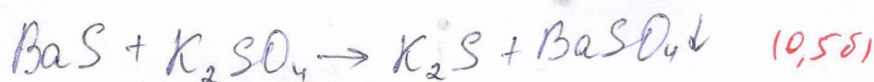
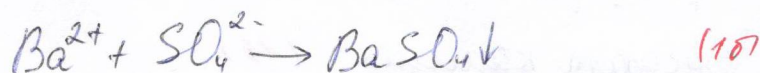
Ответ: 78,8% (BaCO₃) и 21,2% (Na₂CO₃). (70)

№4.



(50)

№5. В одном растворе не могут находиться ионы Ba²⁺ и SO₄²⁻ потому что при их взаимодействии образуется нерастворимое вещество.



(20)

Всего-250