

Оприсып

17

Σ 685

Дано?

$$V(H_2O) = 3 \text{ л} = 3000 \text{ г}$$

раствор - мо $CuSO_4$ при $20^\circ C$ растворим $20,5 \text{ г}$
 100 г H_2O
 Найти: $m(CuSO_4)$

Решение:



Составим пропорцию:

$$20,5 - 100,5$$

$$X - 3000 + X$$

$$120,5X = 20,5(3000 + X)$$

$$120,5X = 61500 + 20,5X$$

$$100X = 61500 / 100$$

$$X = 615 \text{ (г)} \text{ — } m(CuSO_4), \text{ которую}$$

нужно растворить в 3 л H_2O

$$\rho(CuSO_4) = \frac{615}{64 + 32 + 64} = \frac{615}{160} = 3,84375 \text{ г/мл}$$

$$m(CuSO_4) \cdot \rho(CuSO_4) = \rho(CuSO_4 \cdot 5H_2O) = 3,84375 \text{ г/мл}$$

$$m(CuSO_4 \cdot 5H_2O) = 3,84375(64 + 32 + 64 + 10 + 80) =$$

$$= 3,84375 \cdot 250 = 960,9375 \text{ г}$$

Ответ: ~~960,9375 г~~ $m(CuSO_4 \cdot 5H_2O) = 960,9375 \text{ г}$

208.

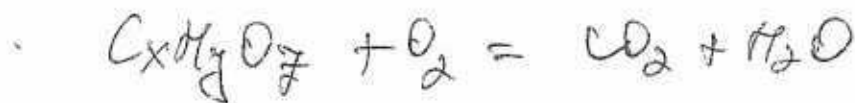
Дано:

$$V(\text{CO}_2) = 6,72 \text{ л}$$

$$m(\text{H}_2\text{O}) = 5,4 \text{ г}$$

Найти: А

Решение:



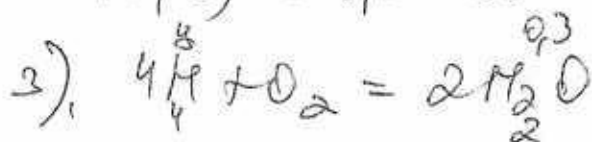
$$1) M(A) = 29 \cdot 2 = 58$$



$$\nu(\text{CO}_2) = \frac{V}{V_n} = \frac{6,72}{22,4} = 0,3 \text{ моль}$$

$$\nu(C) = \nu(\text{CO}_2) = 0,3 \text{ моль}$$

$$m(C) = 0,3 \cdot 12 = 3,6 \text{ г}$$



$$\nu(\text{H}_2\text{O}) = \frac{5,4}{18} = 0,3 \text{ моль} = \frac{n}{18} = \frac{5,4}{18} = 0,3 \text{ моль}$$

$$\frac{4}{4} = \frac{0,3}{2}$$

$$y = \frac{4 \cdot 0,3}{2} = 0,6 \text{ моль} = \nu(H)$$

$$m(H) = 0,6 \cdot 1 = 0,6 \text{ г}$$



Составим соотношение:

$$x : y : z = 0,3 : 0,6 : 0,7 \quad / \cdot 10$$

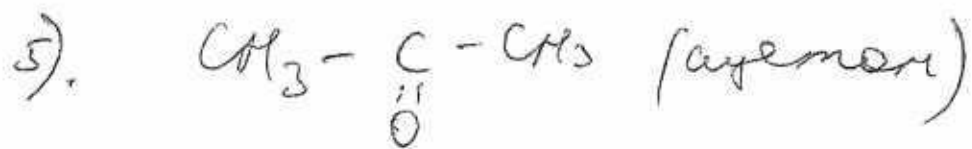
$$x : y : z = 3 : 6 : 7$$

(C₃H₆O)_n — простейшая формула

Будем n=1, тогда

Проверка:

$$M_r(C_3H_6O) = 12 \cdot 3 + 6 \cdot 1 + 16 = 58 - \text{верно.}$$



205.

№3

Дано:

$$w(\text{Cu}) = 92,31\%$$

$$m(\text{H}_2\text{SO}_4) = 196,2$$

$$w(\text{H}_2\text{SO}_4) = 90\%$$

$$V(\text{SO}_2) = 2,24 \text{ л}$$

$$m(\text{BaCl}_2) = 1040,2$$

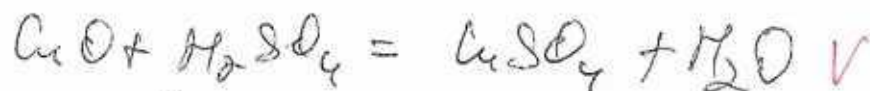
$$w(\text{BaCl}_2) = 10\%$$

$$m(\text{Sr}(\text{NO}_3)_2) = 353,2$$

$$w(\text{Sr}(\text{NO}_3)_2) = 90\%$$

$$w(\text{b-b}) = ?$$

Решение:



$$m(\text{H}_2\text{SO}_4) = 196 \cdot 0,9 = 176,4 \text{ г} \checkmark$$

$$w(\text{Cu}) = \frac{Ar(\text{Cu})}{M_r}$$

$$\frac{0,9231}{1} = \frac{64}{M_r}$$

$$M_r = 0,9231 \cdot 64 = 59,0784 \approx$$

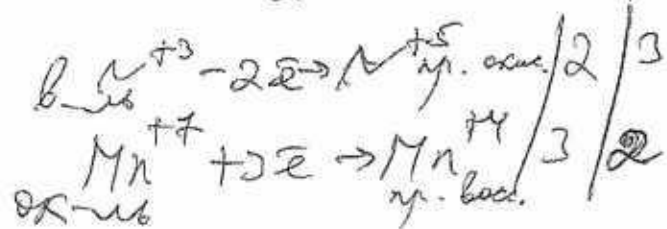
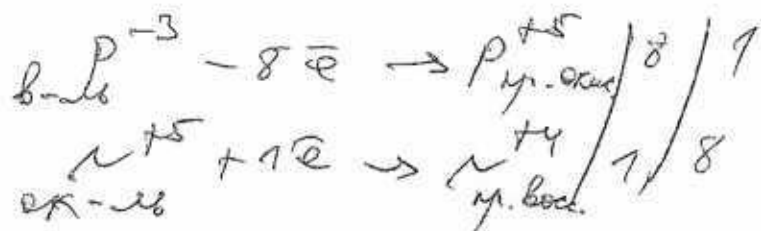
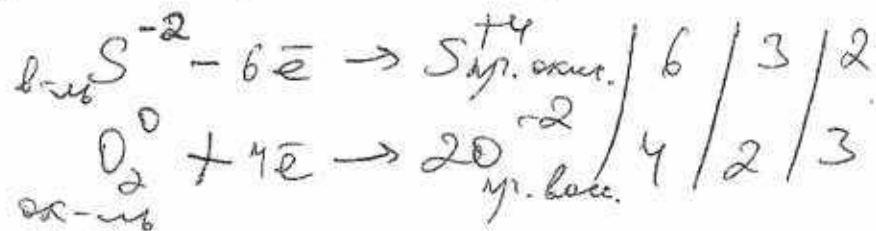
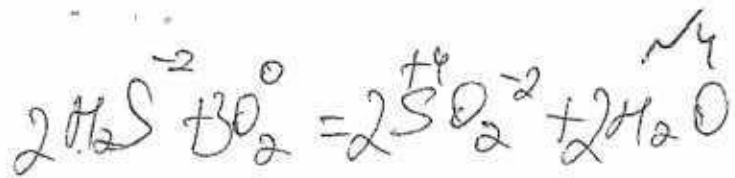
$$\nu(\text{SO}_2) = \frac{2,24}{22,4} = 0,1 \text{ моль} \checkmark$$



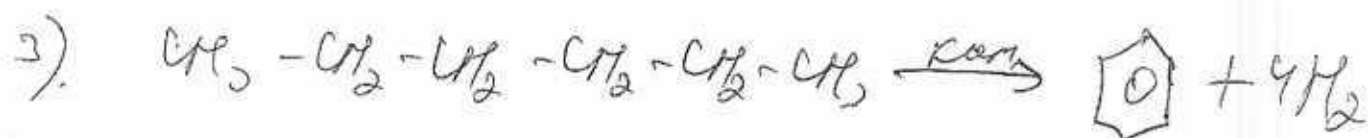
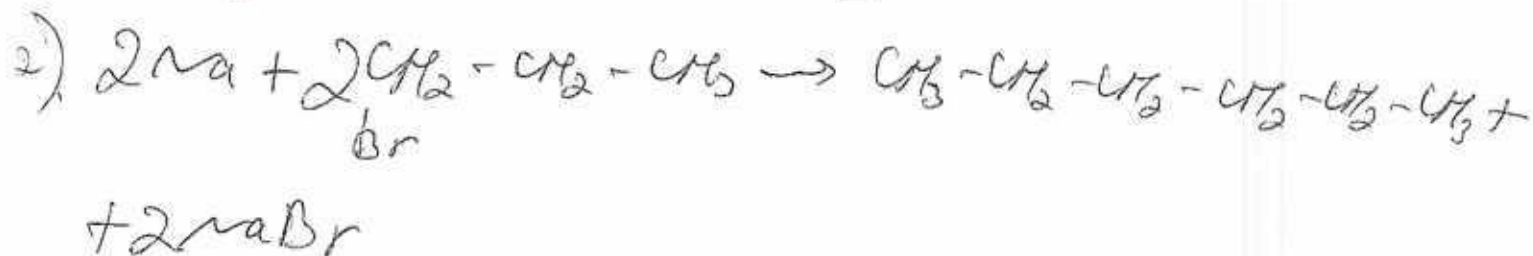
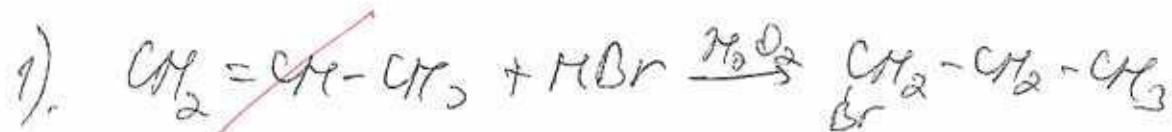
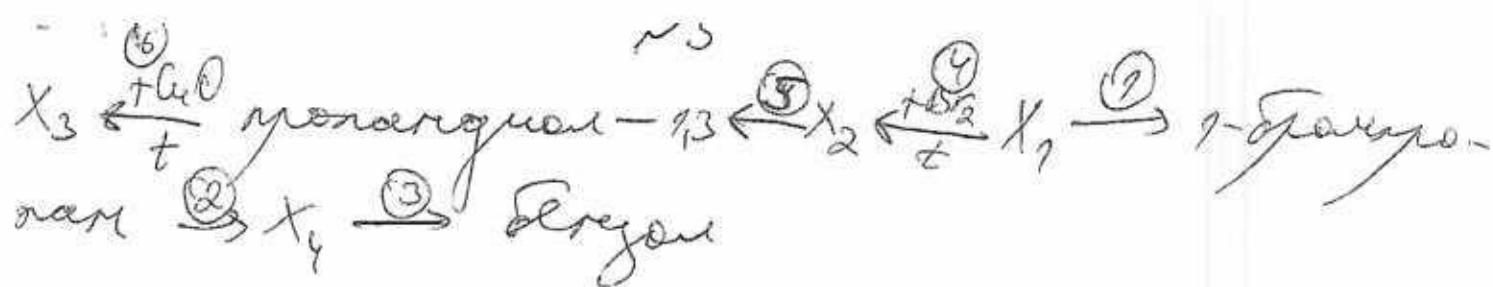
$$m(\text{BaCl}_2) = 1040 \cdot 0,1 = 104,0 \text{ г} \checkmark$$

$$m(\text{Sr}(\text{NO}_3)_2) = 353,2 \cdot 0,9 = 317,88 \text{ г} \checkmark$$

35.



125.



138.

