

9-1

$$\begin{aligned}
 &4,61 \quad 307 \\
 &2Me(III) + I_2 = 2MeI \\
 &2Me \quad 2Me + 127 \\
 &Mr(Me) = x \\
 &Mr(MeI) = x + 127 \\
 &4,61 \dots 307 \\
 &2x \dots 2(x + 127) \\
 &60x = 4,61x + 584,2 \\
 &x = 23 \\
 &Na = 23
 \end{aligned}$$

9-2.

Шешуі:

Аккумулятордың ерітіндісінің массасы:

$$m_3(ер) = V_3 \cdot \rho = 6000 \text{ мл} \cdot 1,261 \text{ г/мл} = 7560 \text{ г}$$

Аккумулятордың ерітіндісіндегі еріген күкірт қосылысның массасы:

$$m_2(е.с) = m_3(ер) \cdot w_3(е.с) = 7560 \text{ г} \cdot 0,35 = 2646 \text{ г}$$

Дүкендегі күкірт қосылыс ерітіндісінің массасы:

$$m_1(ер) = m_2(е.с) / w_1(е.с)$$

$$m_1(ер) = 2646 \text{ г} : 0,79 = 3349,4 \text{ г}$$

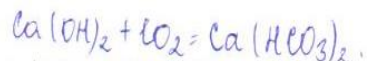
Дүкендегі күкірт қосылыс ерітіндісінің көлемі:

$$V_1 = m_1 / \rho = 3349,4 \text{ г} : 1,722 \text{ г/мл} = 195 \text{ мл}$$

$$\text{Вұдақ} : V_1 = 195 \text{ мл}$$

$$\text{Сұрақ көлемі} : V_2 = V_3 + V_1 = 6000 \text{ мл} + 195 \text{ мл} = 5805 \text{ мл}$$

9-3



$$w(Ca(HCO_3)_2) / w(Ca(OH)_2) = ?$$

$$w(Ca(OH)_2) = 74$$

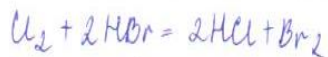
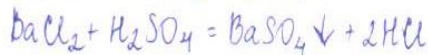
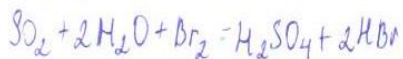
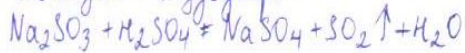
$$w(Ca(HCO_3)_2) = 162$$

$$w(Ca(HCO_3)_2) / w(Ca(OH)_2) = 162 : 74 = 2,2$$

9-4

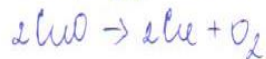
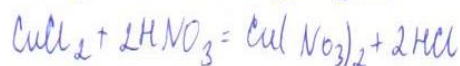
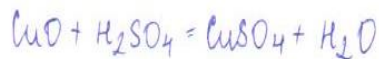
Отыр ісімі түркіз, газ күкірт, газ күкірт (IV) оксиді басқа мүмкін. Сұйық күйді баалаған асаи жаптыр - бран иен сәнал. Сәнал күкірты күйді өрескел-тескейді, димек, Б - жапа - бран

Тыжықт мөндүкері:



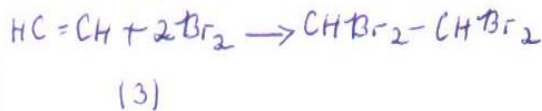
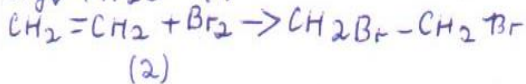
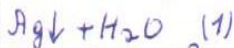
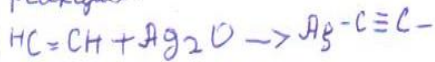
Димек, А - сұмьарит, Б - SO_2 , В - Br_2 , Г - Cl_2

9-5



10.4.

реакция:

Заттың мөлшері Ag_2O : $n(\text{Ag}_2\text{O}) = 17,42 / 232,2 \text{ г/моль} = 0,075 \text{ моль}$ Заттың мөлшері Br_2 : $n(\text{Br}_2) = 282 / 160 \text{ г/моль} = 0,175 \text{ моль}$ $n(\text{C}_2\text{H}_2) = n(\text{Ag}_2\text{O}) = 0,075 \text{ моль}$ ацетилен көлемі: $V(\text{C}_2\text{H}_2) = 0,075 \text{ моль} \cdot 22,4 \text{ л/моль} = 1,68 \text{ л}$ 0,075 моль ацетилен реакция береді $0,075 \cdot 2 = 0,150 \text{ моль Br}_2$ $0,175 - 0,150 = 0,025 \text{ моль Br}_2$ $n(\text{C}_2\text{H}_4) = n(\text{Br}_2) = 0,025 \text{ моль}$

этилен көлемі:

 $V(\text{C}_2\text{H}_4) = 0,025 \text{ моль} \cdot 22,4 \text{ л/моль} = 0,56 \text{ л}$ этан көлемі: $V(\text{C}_2\text{H}_6) = 2,8 \text{ л} - 1,68 \text{ л} - 0,56 \text{ л} = 0,56 \text{ л}$

сұйықтан, газ, ерітінді:

$$\varphi(\text{C}_2\text{H}_2) = [V(\text{C}_2\text{H}_2) / V(\text{ерітінді})] \cdot 100\%$$

$$\varphi(\text{C}_2\text{H}_2) = (1,68 / 2,8) \cdot 100\% = 60\%$$

$$\varphi(\text{C}_2\text{H}_4) = [V(\text{C}_2\text{H}_4) / V(\text{ерітінді})] \cdot 100\%$$

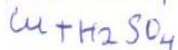
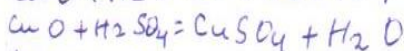
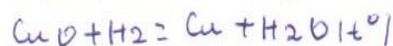
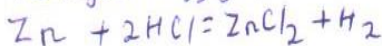
$$\varphi(\text{C}_2\text{H}_4) = (0,56 / 2,8) \cdot 100\% = 20\%$$

$$\varphi(\text{C}_2\text{H}_6) = [V(\text{C}_2\text{H}_6) / V(\text{ерітінді})] \cdot 100\%$$

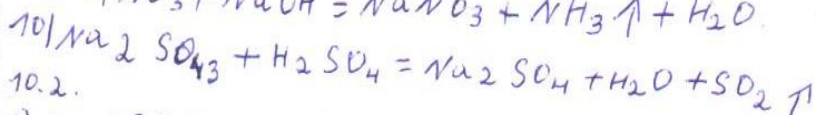
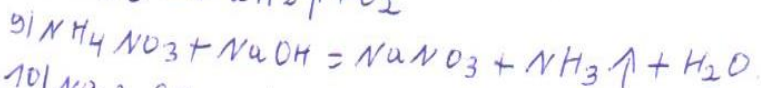
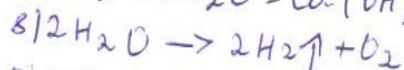
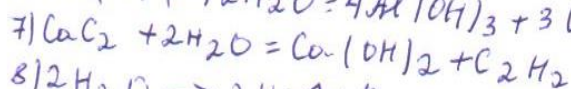
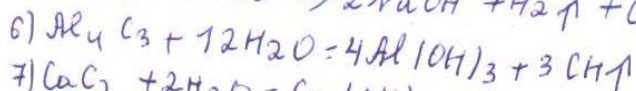
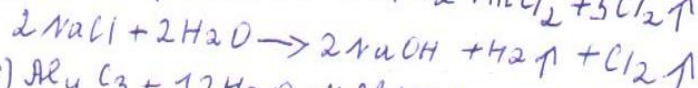
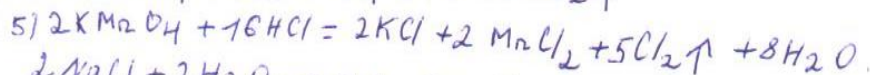
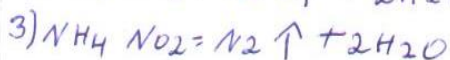
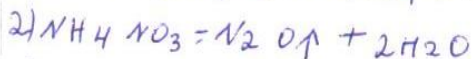
$$\varphi(\text{C}_2\text{H}_6) = (0,56 / 2,8) \cdot 100\% = 20\%$$

10.5.

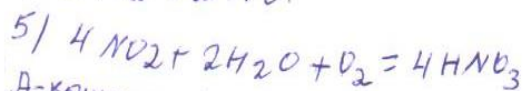
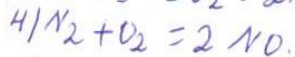
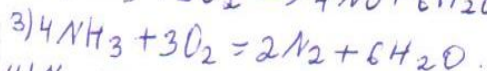
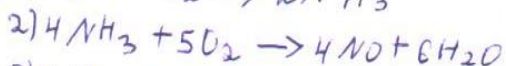
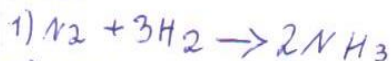
реакция теңдеуі:

 $n(\text{Zn}) = 3,02 / 65 \text{ г/моль} = 0,046 \text{ моль}$ ерітінді масса HCl : $m(\text{P-р HCl}) = 18,7 \text{ г} \cdot 1,072 \text{ г/мл} = 20,07 \text{ г}$ реакция теңдеуі: $n(\text{CuO}) = 4,02 / 80 \text{ г/моль} = 0,05 \text{ моль}$ масса HCl : $m(\text{P-р HCl}) = 202 \cdot 0,146 = 29,27$

10.1

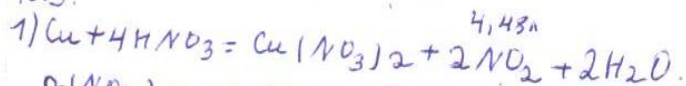


10.2.



А-күшкір, В-сұйықтар, С-азот.

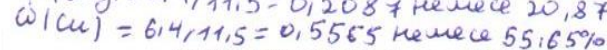
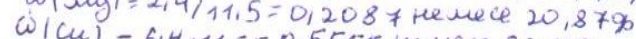
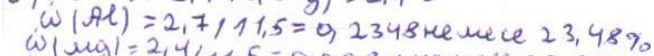
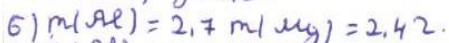
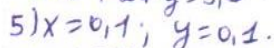
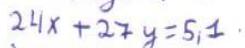
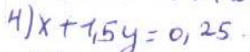
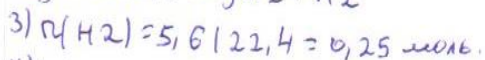
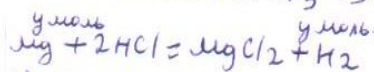
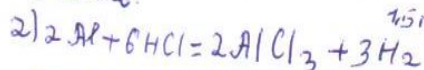
10.3.



$n(\text{NO}_2) = 4,48 / 22,4 = 0,2$ моль

$n(\text{Cu}) = 0,1$ моль; $m(\text{Cu}) = 64 \times 0,1 = 6,42$

х-моль



Парақтың артқы жағын толтырмаңыз / Обратную сторону листа не заполнять

1. 1) $\text{CH}_3 - \text{CH}_2 - \text{CH}_3 + \text{Cl}_2 \rightarrow \text{CH}_3 - \text{CHCl} - \text{CH}_3 + \text{HCl} \text{ (hv, t}^\circ\text{)}$
 2) $\text{CH}_3 - \text{CHCl} - \text{CH}_3 + \text{KOH (спирт. р-р)} \rightarrow \text{CH}_3 - \text{CH} = \text{CH}_2 + \text{KCl} + \text{H}_2\text{O}$
 3) $\text{CH}_3 - \text{CH} = \text{CH}_2 + \text{Cl}_2 \rightarrow \text{CH}_3 - \text{CHCl} - \text{CH}_2\text{Cl}$
 4) $\text{CH}_3 - \text{CHCl} - \text{CH}_2\text{Cl} + 2 \text{ KOH (спирт. р-р)} \rightarrow \text{CH}_3 - \text{C} \equiv \text{CH} + 2 \text{ KCl} + 2 \text{ H}_2\text{O}$
 5) $\text{CH}_3 - \text{C} \equiv \text{CH} + \text{H}_2 \rightarrow \text{CH}_3 - \text{CH} = \text{CH}_2 \text{ (t}^\circ, \text{p, kt)}$
 6) $\text{CH}_3 - \text{CH} = \text{CH}_2 + \text{HON} \rightarrow \text{CH}_3 - \text{CH}(\text{OH}) - \text{CH}_3 \text{ (t}^\circ, \text{p, kt)}$
 7) $\text{CH}_3 - \text{CH}(\text{OH}) - \text{CH}_3 + \text{HBr} \rightarrow \text{CH}_3 - \text{CHBr} - \text{CH}_3 + \text{H}_2\text{O (при t}^\circ\text{)}$
 8) $2 \text{ CH}_3 - \text{CHBr} - \text{CH}_3 + 2 \text{ Na} \rightarrow \text{CH}_3 - \text{CH}(\text{CH}_3) - \text{CH}(\text{CH}_3) - \text{CH}_3 + 2 \text{ NaBr}$ (Вторую реакцию)

2. А - $\text{CH}_3 - \text{CH}_3$

этан

В - $\text{CH}_3 - \text{CH}_2 - \text{CH}_3$

пропан

С - $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH}_3$

н-бутан

Д - $\text{CH}_3 - \text{CH}(\text{CH}_3) - \text{CH}_3$

2-метилпропан (изобутан)

Е - $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \text{CH}_3$

н-пентан

F - $\text{CH}_3 - \text{CH}(\text{CH}_3) - \text{CH}_2 - \text{CH}_3$

2-метилбутан (изопентан)

G - $\text{CH}_3 - \text{C}(\text{CH}_3)_2 - \text{CH}_3$

2,2-диметилпропан (неопентан)

H - $\text{CH}_3 - \text{C}(\text{CH}_3)_2 - \text{CH}(\text{CH}_3) - \text{CH}_3$

2,2,3-триметилбутан

3. Зат формуласы $\text{C}_x\text{H}_y\text{F}_z$

Салыстырмалы молекулярлық салмағы 29.3, 52.102

$$x:y:z = \frac{23.53}{12} : \frac{1.96}{1} : \frac{74.51}{19} \quad \text{C:H:F} = 1:1:2$$

Ең қарапайым формула CHF_2 $M_r = 51$ демек молекулалық формула $\text{C}_2\text{H}_2\text{F}_4$

$$\text{Менесі: } 12x + y + 19z = 102$$

$$12 - 23.53\%$$

$$102 - 100\% x = 2$$

$$y - 1.96\%$$

$$102 - 100\% y = 2$$

$$19z - 74.51\%$$

$$102 - 100\% z = 4$$

$$\text{C}_2\text{H}_2\text{F}_4$$

Парақтың артқы жағын толтырмаңыз / Обратную сторону листа не заполнять

4. 1) $M(t-6a) = D \cdot M(CN_2) = 2 \cdot 45 = 90 \text{ г/моль}$

2) $n(CO_2) = \frac{2,24}{22,4} = 0,1 \text{ моль}$

$n(CO_2) = n(C) = 0,1 \text{ моль}$

$m(C) = 0,1 \cdot 12 = 1,2$

$n(H_2O) = \frac{0,9}{18} = 0,05 \text{ моль}$

$n(H) = 2 \cdot n(H_2O) = 0,05 \cdot 2 = 0,1 \text{ моль}$

$m(H) = 0,1 \cdot 1 = 0,1$

3) $m = 4,5 - 1,2 - 0,1 = 3,2$

$n(O) = \frac{3,2}{16} = 0,2 \text{ моль}$

4) $C : H : O = 0,1 : 0,1 : 0,2 = 1 : 1 : 2 \text{ CNO}_2$

5. 1) $6C^0 - 24e^- \rightarrow 6C^{+4}$

