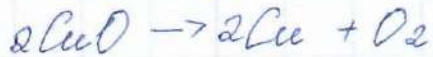
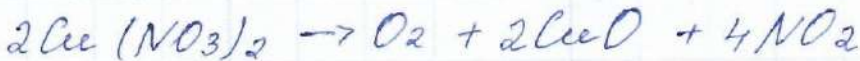


9-5.



9-1

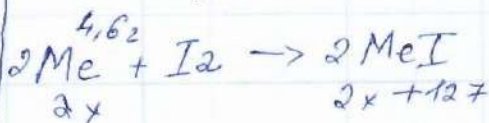
Бер:

$$m(\text{Me}) = 4,62$$

$$m(\text{MeI}) = 302$$

Т.к: Me - ?

шешісі:



$$Mr(\text{Me}) = x$$

$$Mr(\text{MeI}) = x + 127$$

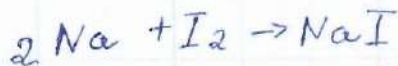
$$462 = 302$$

$$2x = 2(x + 127)$$

$$60x = 4,6x + 584,2$$

$$x = 23$$

$$Mr(\text{Na}) = 23$$



жауабы: Me - Na

9-2

$$m_3(\text{e.p}) = V_3 \cdot \rho = 6000\text{мл} \cdot 1,26\text{г/мл} = 7560\text{г}$$

$$m_2 = 7560 \cdot 0,35 = 2646\text{г}$$

$$m_1(\text{e.p}) = \frac{2646}{0,79} = 3349,42$$

$$V_1 = \frac{m_1}{\rho} = \frac{3349,42}{1,72\text{г/л}} = 195\text{мл}$$

$$V_1 = 195\text{мл}$$

$$V_2 = V_3 + V_1 = 6000\text{мл} - 195\text{мл} = 5805\text{мл}$$

жауабы:  $V_2 = 5805\text{мл}$

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 Облысы / Область ..... Предмет .....

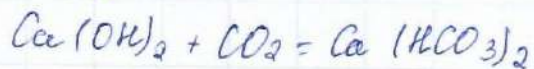
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9-3.



$$\frac{w(\text{Ca(HCO}_3)_2)}{w(\text{Ca(OH)}_2)} = ?$$

$$w(\text{Ca(OH)}_2) = 74$$

$$w(\text{Ca(HCO}_3)_2) = 162$$

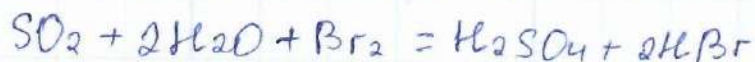
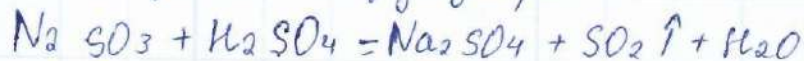
$$\frac{w(\text{Ca(HCO}_3)_2)}{w(\text{Ca(OH)}_2)}$$

$$w(\text{Ca(OH)}_2) = \frac{162}{74} = 2,2$$

Жауабы: 2,2

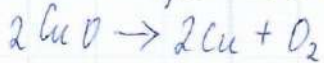
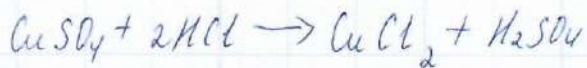
9-4.

Реакция теңдеулері



Ж.А - сұльфит, Б -  $\text{SO}_2$ ; В -  $\text{Br}_2$ , Г -  $\text{Cl}_2$

9.5



9.1

Бер	Маңыи
$m(\text{Me}) = 4,62$	$2\text{Me} + \text{I}_2 = 2\text{MeI}$
$m(\text{MeI}) = 302$	$2\text{Me} \times \quad 2\text{I} \times 127$
<u>Т/К: Me - ?</u>	$M_r(\text{Me}) = x$
	$M_r(\text{MeI}) = x + 127$

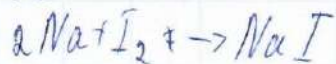
$$4,62 \text{ — } 302$$

$$2x \text{ — } 2(x + 127)$$

$$60x = 4,62x + 584,2$$

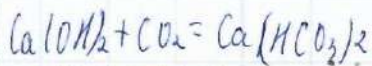
$$x = 23$$

$$\text{Na} = 23$$



м/бел, Me - Na

9.3



$$\frac{w(\text{Ca}(\text{HCO}_3)_2)}{w(\text{Ca}(\text{OH})_2)} = ?$$

$$w(\text{Ca}(\text{OH})_2) = 74$$

$$w(\text{Ca}(\text{HCO}_3)_2) = 162$$

$$w(\text{Ca}(\text{HCO}_3)_2) = 162$$

$$w(\text{Ca}(\text{HCO}_3)_2)$$

$$\frac{w(\text{Ca}(\text{HCO}_3)_2)}{w(\text{Ca}(\text{OH})_2)} = \frac{162}{74} = 2,2$$

Парақтың артқы жағын толтырмаңыз / Обратную сторону листа не заполнять

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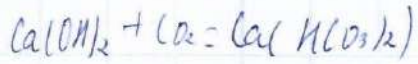
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9.3.



9.2

$$m_3(\text{e.p.}) V_3 \cdot \rho = 6000 \text{ мл} \cdot 1,262 \text{ г/мл} = 7560,2 \text{ г}$$

$$m_2 = 7560 \cdot 0,35 = 2646,2$$

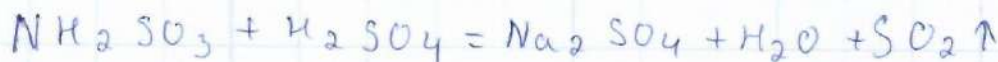
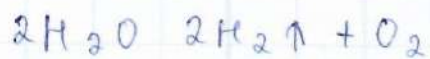
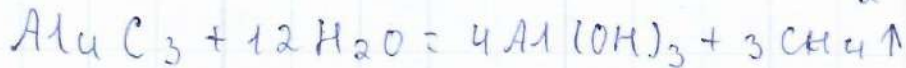
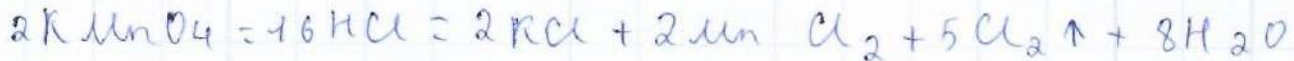
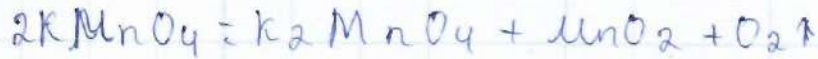
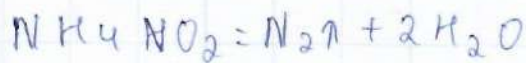
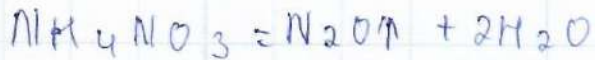
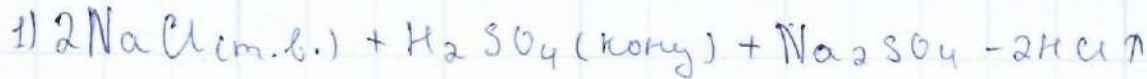
$$m_1(\text{e.p.}) = \frac{2646}{0,79} = 3349,42$$

$$V_1 = \frac{m}{\rho} = \frac{3349,42}{1,722 \text{ г/мл}} = 195 \text{ мл}$$

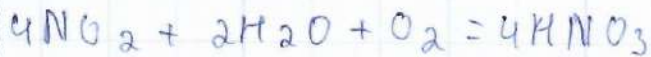
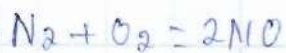
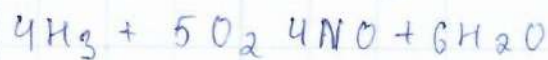
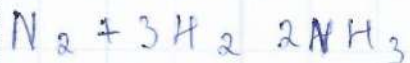
$$V_1 = 195 \text{ мл}$$

$$V_2 = V_3 + V_1 = 6000 \text{ мл} - 195 \text{ мл} = 5805 \text{ мл}$$

10-1



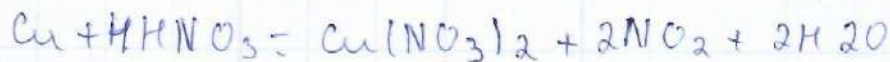
10-2



Әне белгісіз теңдеулер жүйесі тұрғызыңыз:

A - оттегі, B - сутегі, C азот.

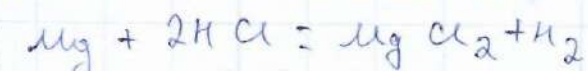
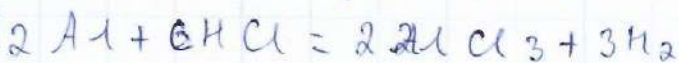
10-3



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

$$n(\text{Cu}) = 0,1 \text{ моль}$$

$$m(\text{Cu}) = 64 \cdot 0,1 = 6,4 \text{ г}$$



$$n(\text{H}_2) = \frac{5,6}{22,4} = 0,25 \text{ моль}$$

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$$x + 1,5y = 0,25$$

$$24x + 27y = 5,1$$

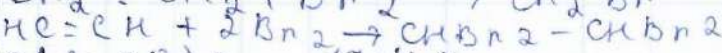
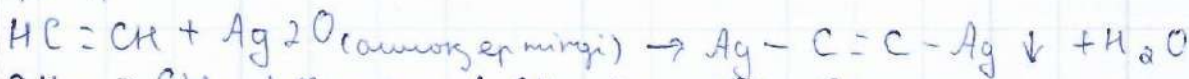
$$m(A) = 2,7 \quad m(Mg) = 2,4$$

$$w(A) = \frac{2,7}{11,5} = 23,48\%$$

$$w(Mg) = \frac{2,4}{11,5} = 20,87\%$$

$$w(Cu) = \frac{6,4}{11,5} = 5,65$$

10-4



$$n(Ag_2O) = \frac{17,4}{232} = 0,075 \text{ моль}$$

$$n(Br_2) = \frac{2,8}{160} = 0,175 \text{ моль}$$

$$n(C_2H_2) = n(Ag_2O) = 0,075 \text{ моль}$$

$$V(C_2H_2) = 0,075 \text{ моль} \cdot 22,4 \text{ л/моль} = 1,68 \text{ л}$$

$$0,075 \cdot 2 = 0,150 \text{ моль}$$

$$0,175 - 0,150 = 0,025 \text{ моль}$$

$$V(C_2H_4) = 0,025 \text{ моль} \cdot 22,4 \text{ л/моль} = 0,56 \text{ л}$$

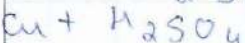
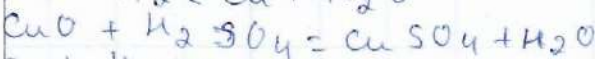
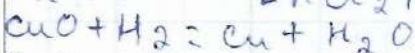
$$V(C_2H_6) = 2,8 \text{ л} - 1,68 \text{ л} - 0,56 \text{ л} = 0,56 \text{ л}$$

$$\varphi(C_2H_2) = \frac{1,68}{2,8} \cdot 100\% = 60\%$$

$$\varphi(C_2H_4) = \frac{0,56}{2,8} \cdot 100\% = 20\%$$

$$\varphi(C_2H_6) = \frac{0,56}{2,8} \cdot 100\% = 20\%$$

10-5



$$n(Zn) = \frac{3,02}{65} = 0,046 \text{ моль}$$

$$m(HCl) = 18,7 \cdot 1,072 \text{ г/мл} = 20,2$$

$$m(HCl) = 20,2 \cdot 0,146 = 2,922$$

$$n(HCl) = \frac{2,922}{36,5} = 0,08 \text{ моль}$$

$$n(H_2) = 1/2 \cdot 0,08 \text{ моль} = 0,04 \text{ моль}$$

$$m(H_2SO_4) = 0,01 \text{ моль} \cdot 98 \text{ г/моль} = 0,98 \text{ г}$$

$$= 0,98 \text{ г}$$

$$m(H_2SO_4)_{(р.м.г)} = \frac{0,98}{0,196} = 5 \text{ г}$$

$$V(H_2SO_4)_{(р.м.г)} = \frac{5}{1,142} = 4,4 \text{ мл}$$

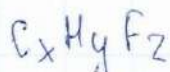
№1

- 1)  $CH_3-CH_2-CH_3 + Cl_2 \rightarrow CH_3-CHCl-CH_3 + HCl$
- 2)  $CH_3-CHCl-CH_3 + KOH \rightarrow CH_3-CHCl-CH_2Cl$
- 3)  $CH_3-CH=CH_2 + Cl_2 \rightarrow CH_3-CHCl-CH_2Cl$
- 4)  $CH_3-CHCl-CH_2Cl + 2KOH \rightarrow CH_3-C \equiv CH + 2KCl + 2H_2O$
- 5)  $CH-C \equiv CH + H_2 \rightarrow CH_3-CH=CH_2$
- 6)  $CH_3-CH=CH_2 + KOH \rightarrow CH_3-CH(OH)-CH_3$
- 7)  $CH_3-CH(OH)-CH_3 + HBr \rightarrow CH_3-CHBr-CH_3 + H_2O$
- 8)  $2CH_3-CHBr-CH_3 + 2Na \rightarrow CH_3-CH(CH_3)-CH(CH_3)-CH_3 + 2NaBr$

№2

- A.  $CH_3-CH_3$  этан
- B.  $CH_3-CH_2-CH_3$  пропан
- C.  $CH_3-CH_2-CH_2-CH_3$  н-бутан
- D.  $CH_3-CH(CH_3)-CH_3$  2-метилпропан
- E.  $CH_3-CH_2-CH_2-CH_2-CH_3$  н-пентан
- F.  $CH_3-CH(CH_3)-CH_2-CH_3$  2-метилбутан
- G.  $CH_3-C(CH_3)_2-CH_3$  2,2-диметилпропан
- H.  $CH_3-C(CH_3)_2-CH(CH_3)-CH_3$  2,2,3-триметилбутан

№3



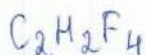
$29 \cdot 3,52 = 102$

$x:y:z = \frac{23,53}{12} : \frac{1,96}{1} : \frac{74,51}{19}$

$C:H:F = 1:1:2$



$M_r = 51$



$12x + y + 19z = 102$

$12x = 23,53\%$

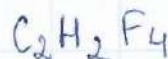
$102 - 100\% \quad x=2$

$y = 1,96\%$

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

$19z = 74,51\%$

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



1,1,2,2-тетрафторэтан

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№4

$$M(Ba) = D \cdot M(CH_2) = 2 \cdot 45 = 90 \text{ г/моль}$$

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

$$n(CO_2) = n(C) = 0,1 \text{ моль}$$

$$m(C) = 0,1 \cdot 12 = 1,2 \text{ г}$$

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

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

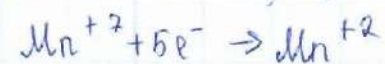
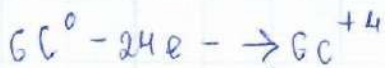
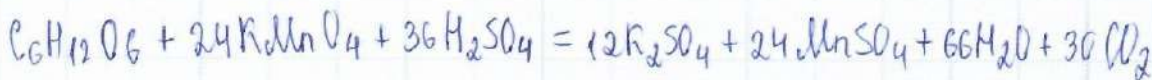
$$m(H) = 0,1 \cdot 1 = 0,1 \text{ г}$$

$$m = 4,5 - 1,2 - 0,1 = 3,2 \text{ г}$$

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

$$C : H : O = 0,1 : 0,1 : 0,2 = 1 : 1 : 2 \quad CHO_2 \quad M(CHO_2) = 45 \quad C_2H_2O_4$$

№5



5 тоттығыздандырылған, тоттығу.

24 тоттығуырған, тоттығыздану.



N<sup>o</sup> 1

- 1)  $CH_3 - CH_2 - CH_3 + Cl_2 \rightarrow CH_3 - CHCl - CH_3 + HCl$
- 2)  $CH_3 - CHCl - CH_3 + KOH \rightarrow CH_3 - CHCl - CH_2Cl$
- 3)  $CH_3 - CH = CH_2 + Cl_2 \rightarrow CH_3 - CHCl - CH_2Cl$
- 4)  $CH_3 - CHCl - CH_2Cl + 2KOH \rightarrow CH_3 - C \equiv CH + 2KCl + 2H_2O$
- 5)  $CH - C \equiv CH + H_2 \rightarrow CH_3 - CH = CH_2$
- 6)  $CH_3 - CH = CH_2 + KOH \rightarrow CH_3 - CH(OH) - CH_3$
- 7)  $CH_3 - OH(OH) - CH_3 + HBr \rightarrow CH_3 - CHBr - CH_3 + H_2O$
- 8)  $2CH_3 - CHBr - CH_3 - 2Na \rightarrow CH_3 - CH(CH_3) - CH(CH_3) - CH_3 + 2NaBr$

N<sup>o</sup> 2.

- A.  $CH_3 - CH_3$  - этан
- B.  $CH_3 - CH_2 - CH_3$  пропан
- C.  $CH_3 - CH_2 - CH_2 - CH_3$  4-бутан
- D.  $CH_3 - CH(CH_3) - CH_3$  - 2 метилпропан
- E.  $CH_3 - CH_2 - CH_2 - CH_2 - CH_3$  4 пентан.
- F.  $CH_3 - CH - CH(CH_3) - CH_2 - CH_3$  2 метилбутан
- G.  $CH_3 - C(CH_3)_2 - CH_3$  2,2 диметилпропан
- H.  $CH_3 - C(CH_3)_2 - CH(CH_3) - CH_3$  2,2,3-триметилбутан

N<sup>o</sup> 3

Бер: $C_x H_y F_z$	$1y - 4,96\%$	$19z - 74,51\%$
$C = 23,53\%$	$102 - 100\%$	$102 - 100\%$
$H = 1,96\%$	$1y \cdot 100 = 100$	$19z \cdot 100 = 1900$
$F = 74,51\%$	$102 \cdot 1,96 = 199,92$	$102 \cdot 74,51 = 7600,02$
$12x - 23,53\%$	$\frac{199,92}{100} = 2$	$\frac{7600,02}{1900} = 4$
$102 - 100\%$		
$12x \cdot 100 = 1200$		$C_x H_y F_z = 2:2:4$
$102 \cdot 23,53 = 2400,06$	$x = \frac{2400,06}{1200} = 2$	$C = 12 \cdot 2 = 24$
		$H = 1 \cdot 2 = 2$
		$F = 19 \cdot 4 = 76$

$C + H + F = 24 + 2 + 76 = 102$

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Класс .....

2 сmp

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№4.

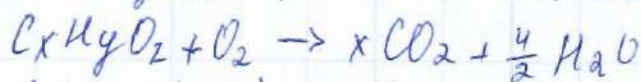
Бер:

$$m(C_xH_yO_z) = 4,52$$

$$V(CO_2) = 2,24 \text{ л}$$

$$V(H_2O) = 99$$

$$Mr(C_xH_yO_z) = 1,035 \cdot 29 = 30 \text{ г/моль}$$



$$n(C) = n(CO_2) = \frac{2,24}{22,4} = 0,1 \quad m(C) = 0,1 \cdot 12 = 1,22$$

$$n(H) = 2 \cdot n(H_2O) = 2 \cdot \frac{99}{18} = 11 \quad m(H) = 11 \cdot 1 = 11$$

$$m(O) = 4,52 - 1,22 - 11 = 2,28 \quad n(O) = \frac{2,28}{16} = 0,14 \text{ моль}$$

№5

