

II ()

, 10

10-1 (4).

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1) $4\text{HCl} + \text{MnO}_2 = \text{MCl}_2 + \text{Cl}_2 + 2\text{H}_2\text{O}$ 2) $3\text{Cl}_2 + 6\text{KOH}(\text{aq}) = 5\text{KCl} + \text{KClO}_3 + 3\text{H}_2\text{O}$ 3) $2\text{KClO}_3 \xrightarrow{\text{M}} 2\text{KCl} + 3\text{O}_2$ 4) $\text{KCl}(\text{aq}) + \text{H}_2\text{SO}_4(\text{aq}) = \text{KHSO}_4 + \text{HCl}$ $2\text{KCl}(\text{aq}) + \text{H}_2\text{SO}_4(\text{aq}) = \text{K}_2\text{SO}_4 + 2\text{HCl}$ - 1	4
	0
	4

10-2 (8)

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1) $2\text{Na} + 2\text{H}_2\text{O} = 2\text{NaOH} + \text{H}_2$	1
2) $\text{NaHCO}_3 + \text{NaOH} = \text{Na}_2\text{CO}_3 + \text{H}_2\text{O}$	1

3)	$\text{FeSO}_4 + 2\text{NaOH} \rightarrow \text{Fe(OH)}_2 + \text{Na}_2\text{SO}_4;$ $2\text{Fe(OH)}_2 + 1/2\text{O}_2 + \text{H}_2\text{O} \rightarrow 2\text{Fe(OH)}_3$	2
4)	$\text{ZnSO}_4 + 2\text{NaOH} \rightarrow \text{Zn(OH)}_2 + \text{Na}_2\text{SO}_4;$ $\text{Zn(OH)}_2 + 2\text{NaOH} \rightarrow \text{Na}_2[\text{Zn(OH)}_4]$	2
5)	$2\text{NH}_4\text{HSO}_4 + 2\text{NaOH} \rightarrow (\text{NH}_4)_2\text{SO}_4 + \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O};$ $(\text{NH}_4)_2\text{SO}_4 + 2\text{NaOH} \rightarrow \text{Na}_2\text{SO}_4 + 2\text{NH}_3 + 2\text{H}_2\text{O}$	2
		0
		8

Ha 17,6 **10-3 (14)**)
 (+2),
 4,48 (. .).
 2,24 (. .).
 , , 9,8 .

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1)	$\text{Me} + 2\text{H}_2\text{S} \rightarrow \text{MeS}_2 + \text{S} + 2\text{H}_2 \quad (1)$ $\text{Me} + \text{H}_2\text{SO}_4 \rightarrow \text{MeS}_2 + \text{H}_2 \quad (2)$
2)	$H_2 \quad SO_2.$ <p> $n(\text{H}_2) = 4,48 : 22,4 / = 0,2$; $n(\text{SO}_2) = 2,24 : 22,4 / = 0,1$. </p>

<p>3)</p> <p>0,1 : $n(\text{Me}^{\text{I}}) = n(\text{Me}^{\text{I}}\text{SO}_4) = n(\text{SO}_2) = 0,1$</p>	<p>2</p>
<p>4)</p> <p>$\text{Me}^{\text{I}}\text{S}_4 + 2\text{NaOH} = \text{Me}^{\text{I}}(\text{OH})_2 + \text{Na}_2\text{S}_4$ (3) $n(\text{Me}^{\text{I}}(\text{OH})_2) = n(\text{Me}^{\text{I}}\text{SO}_4) = 0,1$</p> <p>$M(\text{Me}^{\text{I}}(\text{OH})_2) = \frac{m(\text{Me}^{\text{I}}(\text{OH})_2)}{n(\text{Me}^{\text{I}}(\text{OH})_2)} = \frac{9,8}{0,1} = 98$ /</p> <p>$M(\text{Me}^{\text{I}}) = M(\text{Me}^{\text{I}}(\text{OH})_2) - 2M(\text{OH}) = 98 - 2 \cdot 17 = 64$ /</p> <p>Cu</p>	<p>3</p>
<p>5)</p> <p>$n(\text{Cu}) = n(\text{Cu}(\text{OH})_2) = n(\text{Me}^{\text{I}}(\text{OH})_2) = 0,1$</p> <p>$m(\text{Cu}) = 64 \cdot 0,1 = 6,4$ /</p> <p>$m(\text{Me}^{\text{II}}) = m(\text{Me}^{\text{II}}(\text{OH})_2) - m(\text{Cu}) = 17,6 - 6,4 = 11,2$ /</p>	<p>2</p>
<p>6)</p> <p>0,2 $n(\text{Me}^{\text{II}}) = n(\text{H}_2) = 0,2$ /</p> <p>$M(\text{Me}^{\text{II}}) = \frac{m(\text{Me}^{\text{II}})}{n(\text{Me}^{\text{II}})} = 11,2 : 0,2 = 56$ /</p> <p>Me^{II} - Fe.</p>	<p>2</p>
<p>7)</p> <p>$(\text{Fe}) = \frac{m(\text{Fe})}{m(\text{Me}^{\text{II}})} = 11,2 : 17,2 = 0,654$ (65,4 %);</p> <p>$(\text{u}) = 1 - 0,654 = 0,346$ (34,6 %).</p>	<p>2</p>

13) Cu + 2H ₂ S → CuS + S + 2H ₂ Fe + H ₂ SO ₄ → FeS + H ₂	1
	0
	14

10-4 (14) 0,001 200 0,148% 0,2 ?

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1) $nH_{2n+2} + \left(\frac{3n+1}{2}\right)O_2 = nCO_2 + (n+1)H_2O$ (1)	1
2) CO ₂ + Ca(OH) ₂ = CaCO ₃ + H ₂ O (2)	1
3) CaCO ₃ + CO ₂ + H ₂ O = Ca(HCO ₃) ₂ (3)	2
4) m(Ca(OH) ₂) = m(Ca(OH) ₂) · ω(Ca(OH) ₂) = 200 · 0,00148 = 0,296 n(Ca(OH) ₂) = m(Ca(OH) ₂) / M(Ca(OH) ₂) = 0,296 : 74 = 0,004	1
5) n(CaCO ₃) = m(CaCO ₃) / M(CaCO ₃) = 0,2 : 100 = 0,002 (2): n(CaCO ₃) = n(Ca(OH) ₂) = 0,004 Ca(OH) ₂	3

<p>7) (): $Ca(OH)_2$</p> <p>CO_2</p> <p>(2):</p> <p>$n(CO_2) = n(Ca_3) = 0,002$</p> <p>(1),</p> <p>$1 \quad nH_{2n+2} \quad n \quad O_2,$</p> <p>$0,001 \quad , \quad 0,002 \quad CO_2,$</p> <p>$n = \frac{0,0}{0,01} = 2.$</p> <p>- C_2H_6.</p>	3
<p>8) (): $Ca(OH)_2$</p> <p>$CaCO_3,$</p> <p>CO_2</p> <p>(2)</p> <p>$Ca(OH)_2:$</p> <p>$n(Ca_3) = n(CO_2)_2 = n(Ca(OH)_2) = 0,004$</p> <p>(3)</p> <p>$n(Ca_3) = n(Ca_3) - n(Ca_3) = 0,004 - 0,002$</p> <p>$= 0,002$</p> <p>$n(CO_2)_3 = n(Ca_3) = 0,002$</p> <p>$n(CO_2) = n(CO_2)_2 + n(CO_2)_3 = 0,002 + 0,004 = 0,006$</p> <p>$n = 6,$</p> <p>- C_6H_{14}.</p> <p>!</p>	3
	0
	14

10-5 (10).

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<p>1) $[Cu(NH_3)_2]OH:$ -1,</p> <p>$C_2H_5-C \equiv CH + [Cu(NH_3)_2]OH \rightarrow C_2H_5-C \equiv C-Cu + 2NH_3 + H_2O$</p>	2

2)	$\overset{-1:}{\text{C}_2\text{H}_5-\text{C}\equiv\text{C}-\text{Cu}} + 2\text{HCl} \quad \overset{-1}{\text{C}_2\text{H}_5-\text{C}\equiv\text{CH}} + \text{H}[\text{CuCl}_2]$	2
3)	$\overset{1,2-}{\text{C}_2\text{H}_5-\text{CH}=\text{CH}_2} + \text{Br}_2 \quad \overset{-1}{\text{C}_2\text{H}_5-\text{CH}-\overset{\cdot}{\text{C}}\text{H}_2}$ $\text{Br} \quad \text{Br}$	2
4)		2
5)	$\overset{-1:}{\text{C}_2\text{H}_5-\text{CHBr}-\text{CH}_2\text{Br}} + \text{Zn} \quad \overset{1,2-}{\text{C}_2\text{H}_5-\text{CH}=\text{CH}_2} + \text{ZnBr}_2$	2
		0
		10