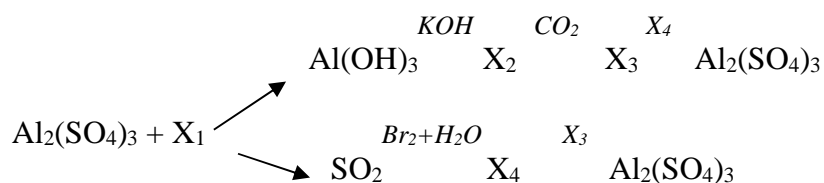


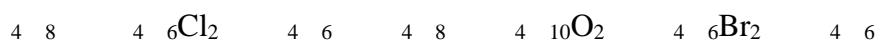
1.



1 - 4.

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1. $\text{Al}_2(\text{SO}_4)_3 + 3\text{Na}_2\text{SO}_3 + 3\text{H}_2\text{O} = 2\text{Al}(\text{OH})_3 + 3\text{Na}_2\text{SO}_4 + 3\text{SO}_2$ $\text{Al}_2(\text{SO}_4)_3 + 6\text{NaHSO}_3 = 2\text{Al}(\text{OH})_3 + 3\text{Na}_2\text{SO}_4 + 6\text{SO}_2$	4
2. $\text{Al}(\text{OH})_3 + \text{KOH} = \text{K}[\text{Al}(\text{OH})_4]$	2
3. $2\text{K}[\text{Al}(\text{OH})_4] + \text{CO}_2 = 2\text{Al}(\text{OH})_3 + \text{K}_2\text{CO}_3 + \text{H}_2\text{O}$ $\text{K}[\text{Al}(\text{OH})_4] + \text{CO}_2 = \text{Al}(\text{OH})_3 + \text{K} \text{CO}_3$	4
4. $\text{SO}_2 + \text{Br}_2 + 2\text{H}_2\text{O} = \text{H}_2\text{SO}_4 + 2\text{HBr}$	4
5. $2\text{Al}(\text{OH})_3 + 3\text{H}_2\text{SO}_4 = \text{Al}_2(\text{SO}_4)_3 + 6\text{H}_2\text{O}$	2
$\text{X}_1 - \text{NaHSO}_3$ Na_2SO_3 ; $\text{X}_2 - \text{K}[\text{Al}(\text{OH})_4]$; $\text{X}_3 - \text{Al}(\text{OH})_3$; $\text{X}_4 - \text{H}_2\text{SO}_4$	4
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2.



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1. $\text{C}_3\text{H}_7\text{Cl} = \text{C}_3\text{H}_7\text{Cl}$ (1) $\text{CH}(\text{Cl})\text{C}(\text{CH}_3)_2 = \text{C}_3\text{H}_7\text{Cl}$	7
2. $\text{C}_3\text{H}_7\text{Cl} = \text{C}_3\text{H}_7\text{Cl}$ (1) $\text{CH}(\text{Cl})\text{C}(\text{CH}_3)_2$	1
3. $\text{C}_3\text{H}_7\text{Cl} + 2\text{KOH} \rightarrow \text{C}_3\text{H}_7\text{Cl} + 2\text{KCl} + 2\text{H}_2\text{O}$	2
4. $\text{C}_3\text{H}_7\text{Cl} + 2\text{KMnO}_4 + 4\text{H}_2\text{O} = \text{C}_3\text{H}_7\text{Cl} + 2\text{MnO}_2 + 2\text{KOH}$	1
5. $\text{C}_3\text{H}_7\text{Cl} = \text{C}_3\text{H}_7\text{Cl} + 2\text{KMnO}_4 + 4\text{H}_2\text{O}$ (OH)CH(OH)C(CH ₃) ₂ + 2MnO ₂ + 2KOH	2
6. $\text{C}_3\text{H}_7\text{Cl} + 2\text{HBr} = \text{C}_3\text{H}_7\text{Cl} + 2\text{H}_2\text{O}$ (Br)CH(Br)C(CH ₃) ₂ + 2H ₂ O	2

7. $\text{C}_3\text{(Br)CH(Br)}_3 + 2\text{KOH}(\text{aq}) \rightarrow \text{C}_3\text{C} + \text{CCH}_3$	2
8. $5\text{CH}_3\text{C} + \text{CCH}_3 + 6\text{MnO}_4 + 9\text{H}_2\text{SO}_4 \rightarrow 10\text{CO}_2 + 6\text{MnSO}_4 + 3\text{H}_2\text{SO}_4 + 4\text{H}_2\text{O}$	3
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3.

(IV) CO_2 40,5 (g). H_2O 0,97 (g). C_3H_8 2,96 (g). C_3H_6 55,5 (g). C_3H_4 90 (g). C_3H_2 1,85 (g).

1. $n(\text{CO}_2) = \frac{m}{M} = \frac{40,5}{44} = 0,92$ (mol);

2. $n(\text{H}_2\text{O}) = \frac{m}{M} = \frac{0,97}{18} = 0,054$ (mol);

()	
1. $n = PV/RT$: $n = (101,3 \cdot 0,97) / (8,31 \cdot 473) = 0,025$ (mol).	2
2. $r(\text{C}) = m/n$, $r(\text{H}) = 1,85 / 0,025 = 74$ (g/mol).	2
3. $n(\text{CO}_2) = 99 / 44 = 2,25$ (mol); $n(\text{H}_2\text{O}) = 40,5 / 18 = 2,25$ (mol); $n(\text{C}) = 2,25 \cdot 12 = 27$ (g); $n(\text{H}) = 4,5 \cdot 1 = 4,5$ (g).	4
4. $m(\text{C}_3\text{H}_8) = 55,5$ (g); $m(\text{C}_3\text{H}_6) = 55,5 - 27 - 4,5 = 24$ (g); $24 / 16 = 1,5$ (mol).	2
5. $n(\text{C}_3\text{H}_8) = 2,25$ (mol); $n(\text{C}_3\text{H}_6) = 1,5$ (mol); $n(\text{C}_3\text{H}_4) = 0,25$ (mol); $n(\text{C}_3\text{H}_2) = 0,25$ (mol); $n(\text{C}_3\text{H}_8) : n(\text{C}_3\text{H}_6) : n(\text{C}_3\text{H}_4) : n(\text{C}_3\text{H}_2) = 2,25 : 1,5 : 0,25 : 0,25 = 9 : 6 : 1 : 1$	1 2
6. $2\text{C}_3\text{H}_8 + \text{C}_3\text{H}_6 + \text{C}_3\text{H}_4 + \text{C}_3\text{H}_2 = (\text{C}_3\text{H}_8)_2 + \text{C}_3\text{H}_6 + \text{C}_3\text{H}_4 + \text{C}_3\text{H}_2$	2
7. $n(\text{C}_3\text{H}_8) = 2,96 : 74 = 0,04$ (mol); $n(\text{C}_3\text{H}_6) = 0,02$ (mol); $n(\text{C}_3\text{H}_4) = 0,02$ (mol); $n(\text{C}_3\text{H}_2) = 0,02$ (mol).	2
8. C_3H_8 2 (mol); C_3H_6 1 (mol); C_3H_4 1 (mol); C_3H_2 1 (mol).	3
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4.

? : 1, (H₂SO₄), HNO₃, NaOH,

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1. (Zn Fe),	2

(1, H ₂ SO ₄)	- ,	
2.	:	1
Zn + 2HCl = ZnCl ₂ + H ₂		1
Fe + 2HCl = FeCl ₂ + H ₂		1
3.	NaOH:	1
ZnCl ₂ + 2NaOH = Zn(OH) ₂ + 2NaCl		1
FeCl ₂ + 2NaOH = Fe(OH) ₂ + 2NaCl		1
4.	,	
:		
Zn(OH) ₂ + 2NaOH = Na ₂ [Zn(OH) ₄]		2
5.	(II) (III):	2
4Fe(OH) ₂ + O ₂ + 2H ₂ O = 4Fe(OH) ₃ , Na ₂ [Zn(OH) ₄]	2:	2
Na ₂ [Zn(OH) ₄] + 2 = Na ₂ 3 + Zn(OH) ₂ + 2		2
6.	:	1
Zn(OH) ₂ = ZnO + 2 () ;		1
2Fe(OH) ₃ = Fe ₂ O ₃ + 3 2 ,	:	1
ZnO + = Zn + ZnO + 2 = Zn + 2		2
Fe ₂ O ₃ + 3 = 2Fe + 3		2
8.	:	
3Cu + 8HNO ₃ = 3Cu(NO ₃) ₂ + 2NO + 4H ₂ O		2
Cu + 4HNO ₃ = Cu(NO ₃) ₂ + 2NO ₂ + 2H ₂ O		2
9.	:	2
2Cu(NO ₃) ₂ = 2Cu + 4NO ₂ + O ₂ ;		
Cu + 2 = Cu + 2 Cu(NO ₃) ₂ + 2NaOH = Cu() ₂ + 2N NO ₃ ;		
Cu() ₂ = Cu + 2 .		
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5.

- 1.
- 2.
- 3.

(,)	
1.	4

2.	:	
)	+ 2	(1) 2
)	3-	(2) 2
)	3 + 2[Ag(NH ₃) ₂]OH	(3) 2
)	NH ₃ + N ₃	(4) 1
)	[Ag(NH ₃) ₂]OH + N ₃	(5) 2
)	ON ₄ + N ₃	(6) 1
)	AgN ₃ + N Br	(7) 2
)	+ 2	(8) 1
)	3-	(9) 1
3.	AgN ₃ + 3NH ₃ + H ₂ O	(10) 2
		20

- 100