

11

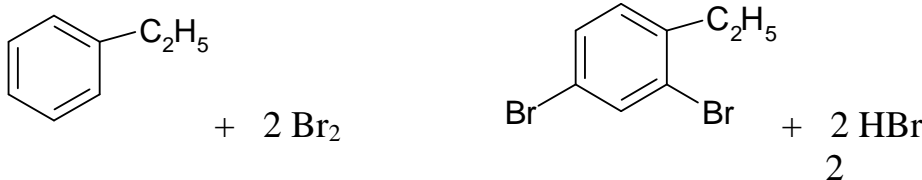
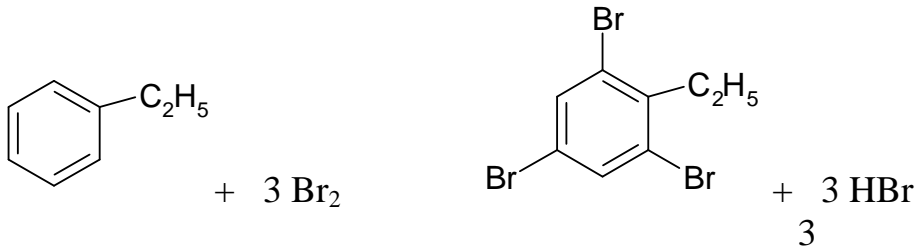
11-1 (10)

99,5 .
 . K₂Cr₂O₇, K₂CrO₄, Cr₂O₃
 -2068, -1398, -1141 / .

(,)	
1) 4K ₂ Cr ₂ O ₇ → 4K ₂ CrO ₄ + 2Cr ₂ O ₃ + 3O ₂	1
2) = 4 · 0 (K ₂ CrO ₄) + 2 · 0 (Cr ₂ O ₃) - 4 · 0 (K ₂ Cr ₂ O ₇) = 4(-1398) + 2(-1141) - 4(-2068) = 398	3
3) m(O ₂) = 3 · $\frac{96}{2}$ · 32 / 398 = 96 m(O ₂) = $\frac{9 \cdot 9,5}{3}$ = 24	3
4) - ; - ; - ; -	3
	0
	10

11-2 (11)
15,9

125 0,2

(,)	
1) $\text{K}_2\text{Cr}_2\text{O}_7 + 14\text{HBr} \rightarrow 2\text{KBr} + 3\text{Br}_2 + 2\text{CrBr}_3 + 7\text{H}_2\text{O}$	2
2. $n(\text{K}_2\text{Cr}_2\text{O}_7) = 0,2 / 0,125 = 0,025$, $n(\text{HBr}) = 14 \cdot n(\text{K}_2\text{Cr}_2\text{O}_7) = 0,35$	2
3) $n(\text{C}_6\text{H}_5\text{C}_2\text{H}_5) = 15,9 / 106 / = 0,15$	1
4) $n(\text{HBr}) : n(\text{C}_6\text{H}_5\text{C}_2\text{H}_5) = 0,35 : 0,15 = 2,33 : 1$	1
5) $n(\text{HBr}) : n(\text{C}_6\text{H}_5\text{C}_2\text{H}_5) = 2 : 1$ 3 : 1 – 2 :	1
 	1
6) $\begin{cases} + = 0,15 \\ 2 + 3 = 0,35 \end{cases}$ $0,1 : = 0,1$, $= 0,05$ 0,1 2, 4- 0,05 2,4,6 -	2
	0
	11

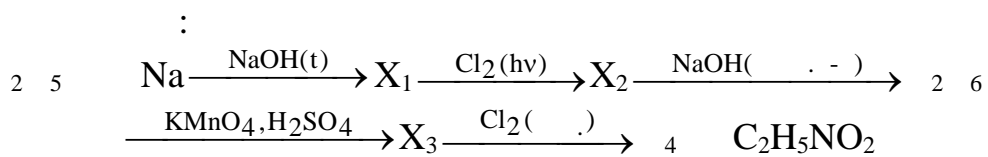
11-3 (8)

U –

(?)

()	
1) $2\text{KCl} + 2\text{H}_2\text{O} = \text{H}_2 + 2\text{KOH} + \text{Cl}_2$	2
2) () : $\text{KOH} + \text{KMnO}_4 + \text{H} \quad \text{K}_2\text{MnO}_4 + \text{H}_2\text{O}$ (: $\text{MnO}_4^- + e \quad \text{MnO}_4^{2-}$).	2
3) () - HCl () - Cl_2 : $\text{K}_2\text{MnO}_4 + 2\text{H} \quad \text{MnO}_2 + 2\text{KOH};$ $4\text{HCl} + \text{MnO}_2 \quad 2\text{H}_2\text{O} + \text{MnCl}_2 + \text{Cl}_2$	4
	0
	8

11-4 (8)



()	
1) 2 5 : $\text{Na} + \text{NaOH} \xrightarrow{(\quad)} \text{C}_2\text{H}_6 + \text{Na}_2\text{CO}_3;$	1
2) $\text{C}_2\text{H}_6 + \text{Cl}_2 \xrightarrow{\text{h}} \text{CH}_3\text{CH}_2\text{Cl} + \text{HCl};$	1
	1

3) $\text{CH}_3\text{CH}_2\text{Cl} + \text{NaOH} \rightarrow \text{CH}_3\text{CH}_2\text{OH} + \text{NaCl}$;	2
4) $5\text{CH}_3\text{CH}_2\text{OH} + 4\text{KMnO}_4 + 6\text{H}_2\text{SO}_4 \rightarrow 5\text{CH}_3\text{COOH} + 4\text{MnSO}_4 + 2\text{K}_2\text{SO}_4 + 11\text{H}_2\text{O}$;	
5) $\text{C}_3\text{H}_7\text{Cl} + \text{Cl}_2 \xrightarrow{\text{P}} \text{C}_3\text{H}_6\text{ClCOOH} + \text{HCl}$;	
6) $\text{C}_3\text{H}_6\text{ClCOOH} + 2\text{NH}_3 \rightarrow \text{C}_3\text{H}_7\text{NHCOOH} + \text{NH}_4\text{Cl}$.	
	0
	8

11-5 (18)

’, $X_1, X_2, X_3, X_4, \dots$,

	AgNO_3	$\text{Pb}(\text{NO}_3)_2$
KX_1		
KX_2		
KX_3		
KX_4	-	-

1. X_1, X_2, X_3, X_4 .
2. X_1, X_2, X_3
3. X_1, X_2, X_3, X_4 .

()	
1) $\text{KX}_1 - \text{KI}, \text{KX}_2 - \text{KCl}, \text{KX}_3 - \text{KF}, \text{KX}_4 - \text{KBr}$.	4
$\text{KX}_3 - \text{KF}$.	
$\text{KX}_2 - \text{KCl}$.	

<p style="text-align: center;">KX₁ – KI, KX₄ – KBr.</p> <p>_____:</p> <p style="text-align: center;">1</p>	
<p>2)</p> <p style="text-align: center;">:</p> <p>AgNO₃ + KI → AgI + KNO₃ Pb(NO₃)₂ + 2KI → PbI₂ + 2KNO₃ AgNO₃ + KCl → AgCl + KNO₃ Pb(NO₃)₂ + 2KCl → PbCl₂ + 2KNO₃ Pb(NO₃)₂ + 2KF → PbF₂ + 2KNO₃ AgNO₃ + KBr → AgBr + KNO₃ Pb(NO₃)₂ + 2KBr → PbBr₂ + 2KNO₃</p>	7
<p>3)</p> <p>KX₁: 2KI + 3H₂SO₄ 2KHSO₄ + I₂ + SO₂ + 2H₂O 6KI + 7H₂SO₄ 6KHSO₄ + 3I₂ + S + 4H₂O 8KI + 9H₂SO₄ 8KHSO₄ + 4I₂ + H₂S + 4H₂O</p> <p>KX₂: KCl + H₂SO₄ KHSO₄ + HCl</p> <p>KX₃: KF + H₂SO₄ KHSO₄ + HF</p> <p>KX₄: KBr + H₂SO₄ KHSO₄ + HBr 2KBr + 3H₂SO₄ 2KHSO₄ + Br₂ + SO₂ + 2H₂O</p> <p>_____:</p> <p style="text-align: center;">,</p> <p style="text-align: center;">, . . .</p> <p style="text-align: center;">,</p> <p style="text-align: center;">, 0,5</p>	7
	0
	18