

II ()

11

- 4

1.

8%

(,)	
AlCl ₃ NaCl	1
$\frac{2}{3}x \quad x \quad 2x \quad 2x \quad \frac{2}{3}x \quad x$ 2AlCl ₃ + 3Na ₂ CO ₃ + 6H ₂ O = 6NaCl + 2Al(OH) ₃ + 3CO ₂	2
AlCl ₃ m (NaCl) = 58,5 / , (AlCl ₃) = 133,5 /	1
(NaCl) = (AlCl ₃), : 58,5 · 2 = 0,08m - 2/3 · 133,5, m = 2575	1
m = 2m - m(Al(OH) ₃) - m(CO ₂) = 2 · 2575x - 2/3x · 78 - 44x = 5054x	2
(AlCl ₃) = (NaCl) = (2 · 58,5) / 5054 = 0,0231 (2,31%)	1
: (Na ₂ CO ₃) = 106 / m = 106x / 2575x = 0,0412 (4,12%)	1
	0
	10

2.

15,0

3

PCl₃

6

Cl₂.

: PCl₃() + Cl₂() PCl₅().

25 / .

PCl₅

(,)	
$K = \frac{[PCl_5]}{[PCl_3] \cdot [Cl_2]}$	2
PCl ₃ [PCl ₃] = 3/15 = 0,2 (/), [Cl ₂] = 6/15 = 0,4 (/).	0,5 0,5
PCl ₅ .	1
PCl ₃ () + Cl ₂ () PCl ₅ (). 0,2- 0,4-	1

$K = \frac{x}{(0,2-x) \cdot (0,4-x)} = 25$:	2
0,2:	,	
$25 = \frac{x}{[(0,2-x) \cdot (0,4-x)]};$ $x^2 - 0,64x + 0,08 = 0$ $x = 0,17$ (/).		1 1
15	$0,17 \cdot 15 = 2,55$ () PCl_5	1
		0
		10

3.

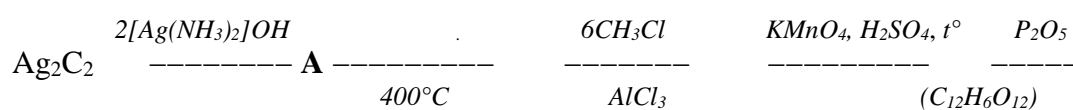
20 , 4,93 , 40
300 1,4 (.).

(,)		
$\text{CH}_3\text{NH}_2 + \text{HCl} \rightarrow [\text{CH}_3\text{NH}_3]^+\text{Cl}^-$; $\text{H}_2\text{NCH}_2\text{COOH} + \text{HCl} \rightarrow [\text{H}_3\text{NCH}_2\text{COOH}]^+\text{Cl}^-$		2
C	:	
$\text{H}_2\text{NCH}_2\text{COOH} + \text{KOH} \rightarrow \text{H}_2\text{NCH}_2\text{COOK} + \text{H}_2\text{O};$ $\text{CH}_3\text{COOC}_2\text{H}_5 + \text{KOH} \rightarrow \text{CH}_3\text{COOK} + \text{C}_2\text{H}_5\text{OH}$		1 1
$4,93/22,4 = 0,22$ (), $0,3 \cdot 1,4 = 0,42$ ()		0,75 0,75
x, y, z 20 , 3 : $31x + 75y + 88z = 20$ $x + y = 0,22$ $2y + 2z = 0,42$ } $x = 0,1; y = 0,12; z = 0,09$		3
$(\text{CH}_3\text{NH}_2) = (31 \cdot 0,09)/20 = 0,15$ (15%) $(\text{H}_2\text{NCH}_2\text{COOH}) = (75 \cdot 0,12)/20 = 0,45$ (45%) $(\text{CH}_3\text{COOC}_2\text{H}_5) = (88 \cdot 0,09)/20 = 0,40$ (40%)		0,5 0,5 0,5
		0
		10

4.

9,93

50 %.



(,)	
-	,		1
$2 \text{ C}_2 + 2[\text{Ag}(\text{NH}_3)_2]\text{OH} \rightarrow \text{Ag}_2\text{C}_2 + 2\text{NH}_4\text{Cl} + 2 \text{ NH}_3$			1
$r = 29 \cdot 9,93 = 288$ (. . .). 50% 144 $\text{C}_{12}\text{H}_6\text{O}_{12}$ 288 $\text{C}_{12}\text{H}_6\text{O}_{12}$ 54 . . . , P_2O_5 , 3- - 12 9.			1
3	2	2 6 6(,400°),	1
6	6	+ 6CH ₃ Cl 6(3)6 + 6HCl (AlCl ₃)	2
5	6(3)6	+36KMnO ₄ +54H ₂ SO ₄ 5C ₆ (COOH) ₆ +36MnSO ₄ +18 K ₂ SO ₄ +84H ₂ O ()	2
C ₆ (COOH) ₆	+ 3P ₂ O ₅	12 9 + 6HPO ₃ ()	2
			0
			10

5.

(,)	
()		2
Na ₂ CO ₃			↑
CuSO ₄ NaOH			
Br ₂ / 2	↓		

$\text{Na}_2\text{CO}_3 + 2 \text{H}_2\text{O} \rightarrow 2 \text{NaOH} + \text{CO}_2 \uparrow + \text{H}_2\text{O}$		2
$\text{C}_2\text{O}_4^{2-} + 2 \text{Cu}^{2+} + 2 \text{OH}^- \rightarrow \text{C}_2\text{O}_4^{2-} + 2 \text{Cu}(\text{OH})_2 \downarrow + 2 \text{H}_2\text{O}$		2
$ \begin{array}{c} \text{CH}_2\text{OH} \\ \\ 2\text{CHOH} \\ \\ \text{CH}_2\text{OH} \end{array} + \text{Cu}(\text{OH})_2 \downarrow \rightarrow \begin{array}{c} \text{CH}_2\text{---O} \\ \\ \text{CH---O} \\ \quad \\ \text{CH}_2\text{OH} \quad \text{H} \end{array} \begin{array}{c} \text{H} \\ \\ \text{O} \\ / \quad \backslash \\ \text{Cu} \\ \backslash \quad / \\ \text{O} \quad \text{O} \\ \quad \quad \quad \\ \quad \quad \quad \text{CH} \\ \quad \quad \quad \\ \quad \quad \quad \text{CH}_2\text{OH} \end{array} + 2\text{H}_2\text{O} $		2
$\text{C}_6\text{H}_5\text{OH} + 3\text{Br}_2 \rightarrow \text{C}_6\text{H}_2(\text{OH})\text{Br}_3 + 3\text{HBr}$		2
		0
		10