

N1

- 1) $[\text{CoCl}_4]^{-}$ Oxid: +3 +
- 2) $[\text{Fe}^{+3}(\text{CN})_6]^{3-}$ Oxid: +3 +
- 3) $[\text{Co}^{+2}(\text{H}_2\text{O})_6]^{2+}$ Oxid: +2 +
- 4) $[\text{Ni}^{+2}(\text{CN})_4]^{2-}$ Oxid: +2 +
- 5) $[\text{Cr}^0(\text{CO})_6]$ Oxid: 0 +
- 6) $[\text{Mn}^{+1}(\text{CO})_5\text{Br}]$ Oxid: +1 +
- 7) $[\text{Mn}^{+1}(\text{CO})_5]^{+}$ Oxid: +1 +

14 балла

1	2	3	4	5	6
14	7	—	19	24	16

Σ 80
Точка

1

√2

Дано:

 $A = X_n Y_m$ $B = V_L Z_1$ $n+m=L+1=5$ $D_{H,N}^B = 2$ A: при $m=0,688$
(0-12%)
0,1412 $V_{H,N} = 0,561$

X? Y? Z? -?

а) Привести к н.у

$$\frac{p_H V_H}{T_H} = \frac{p V}{T} \Rightarrow \frac{1_{атм} \cdot V_H}{273,15 K} = \frac{0,1 \cdot 8,56}{261,15 K} \Rightarrow V_H = 0,895 л$$

$$2) V_H = \frac{0,895}{22,4} \approx 0,04 \text{ моль} \Rightarrow M(A) = \frac{0,04}{0,68} = 17,2 \text{ моль} \quad \oplus$$

3) 17,2 моль $\rightarrow$ где C-углерод-12 $\oplus$ 45

$$0,4 M_r(B) = 2 \cdot M_r(NH_3) = 2 \cdot 17 = 34 \text{ моль} \quad \oplus$$

2) 34 моль $\rightarrow$ где Si-кремний-30 $\oplus$ 25в. 1) $Y_{C^{12}}$ - 7 нейтронов2) $Y_{Si^{30}}$ - 16 нейтроновОтвет: A - $C_n H_m$, где у C^{12} - 7 нейт. $\oplus$ 15B - $Si_n H_m$, где у Si^{30} - 16 нейт. $\ominus$

2

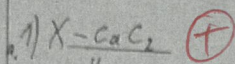
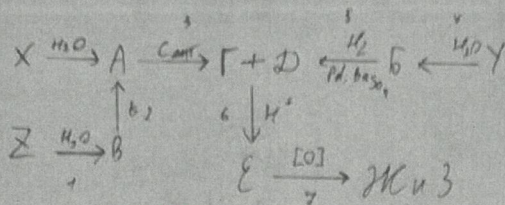
14

Дано:

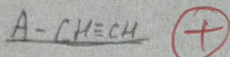
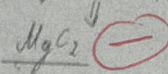
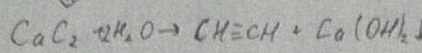
X - белый карбид

A - хлопок при поджиге

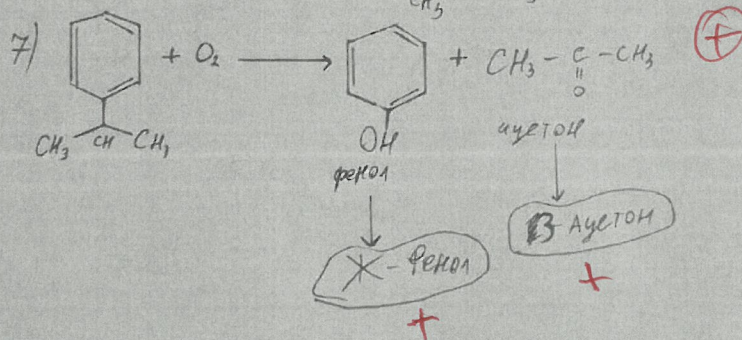
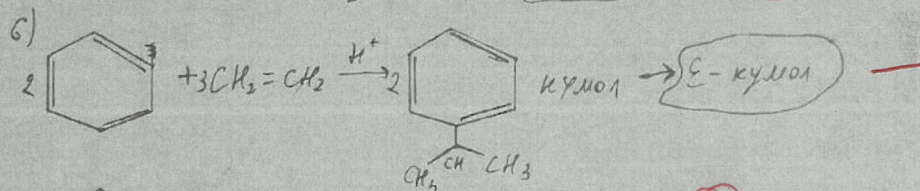
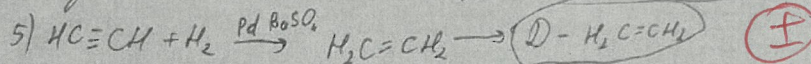
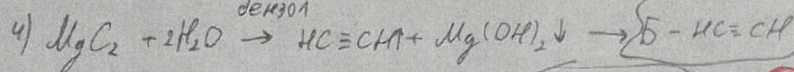
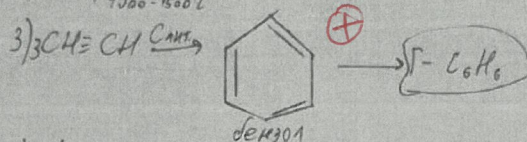
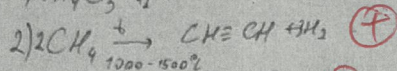
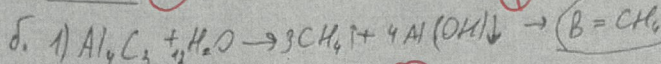
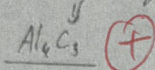
Z - мет. из группы 2-го периода



2) Y - Mg, вступает в реакцию с Ca



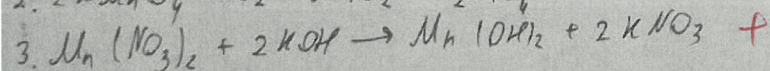
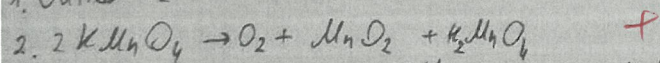
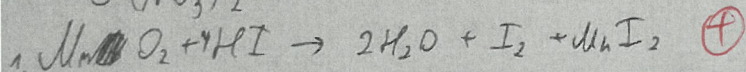
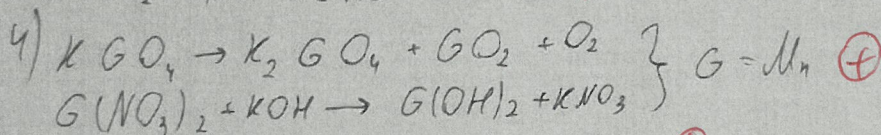
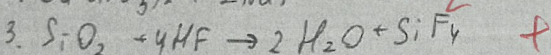
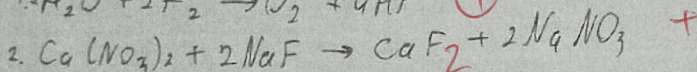
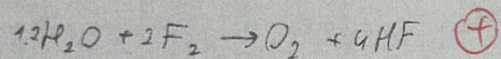
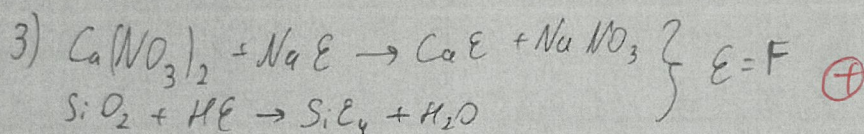
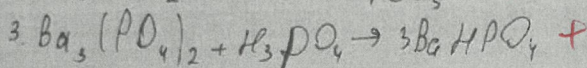
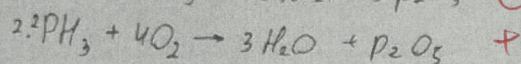
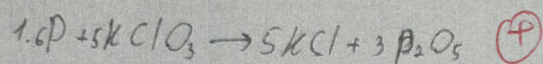
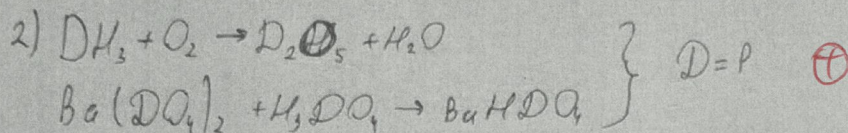
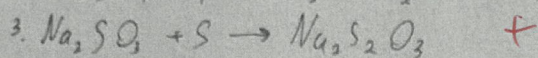
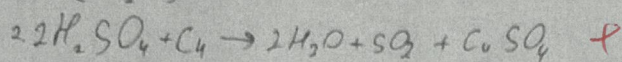
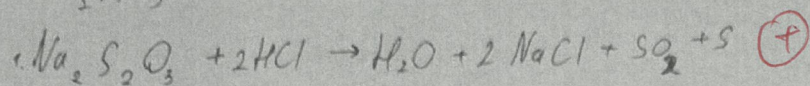
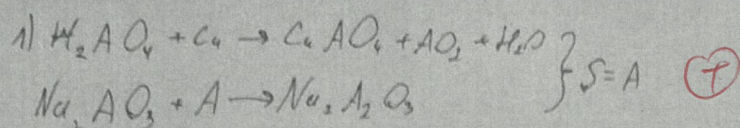
3) Z - Al-из группы



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3

N5



4

N6

$$K_{\text{exp}}(\text{C}_6\text{H}_6) = 2,57$$

64 г нафт.

250 г C_6H_6

$$M(\text{C}_{10}\text{H}_8) = 128 \text{ г/моль}$$

$$\frac{64}{128} = 0,5 \text{ моль}$$

$$\frac{0,5}{250} = \frac{2 \text{ моль}}{1000 \text{ г}} \rightarrow 2 \text{ моль/кг} \quad \oplus$$

$$\Delta T_{\text{зам}} = 2,57 \cdot \frac{\text{К} \cdot \text{кг}}{\text{моль}} \cdot 2 = 5,14 \text{ К} \quad \oplus$$

$$\Delta T_{\text{зам}} = 3,68 \cdot \frac{\text{К} \cdot \text{кг}}{\text{моль}} \cdot 2 = 7,36 \text{ К} \quad \oplus$$

$$T_{\text{пл}}(\text{C}_6\text{H}_6) = 515 + 273,15 = 278,65 \text{ К}$$

$$T_{\text{пл}}(\text{CH}_3\text{Cl}) = 209,65 \text{ К}$$

$$T_{\text{примес}}(\text{C}_6\text{H}_6 + \text{C}_{10}\text{H}_8) = 278,65 - 5,14 = 273,51 \text{ К} = 0,38^\circ \text{C} \quad \oplus$$

$$T_{\text{примес}}(\text{CH}_3\text{Cl} + \text{C}_{10}\text{H}_8) = 209,65 - 7,36 = 202,29 \text{ К} = -71,20^\circ \text{C} \quad \oplus$$