

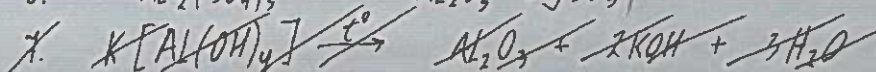
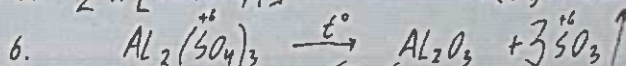
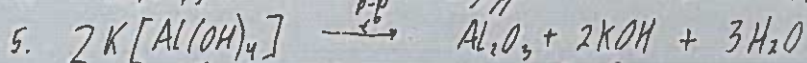
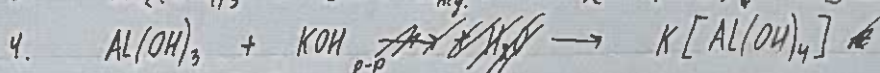
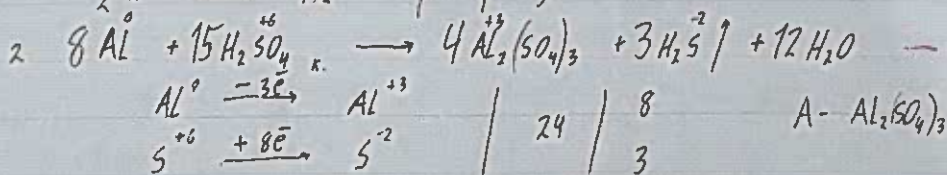
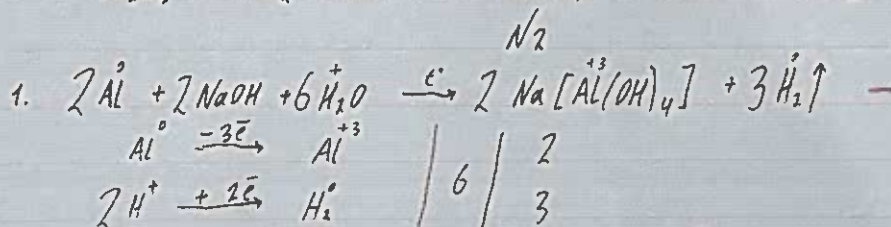
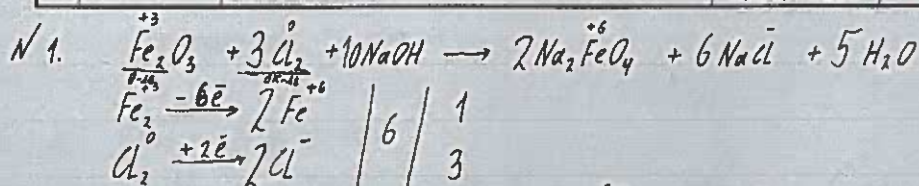


Олимпиада школьников «Гранит науки» Шифр работы _____
БЛАНК ОЛИМПИАДНОЙ РАБОТЫ

(не заполнять)

ВАРИАНТ № 1

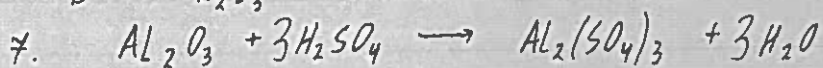
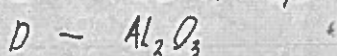
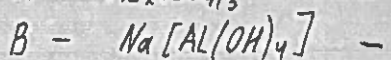
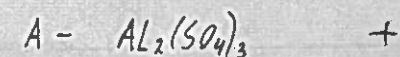
Оценка выполнения олимпиадной работы (заполняется проверяющим)												
Первая проверка	№ задания	1	2	3	4	5	6	7	8	9	10	Σ
	Полученный балл	5	4	15	20	8	0					52
	Σ баллов прописью	пятьдесят два.						Подпись проверяющего				
Вторая проверка	№ задания	1	2	3	4	5	6	7	8	9	10	Σ
	Полученный балл	5	4	15	20	8	0					52
	Σ баллов прописью	пятьдесят два.						Подпись проверяющего				



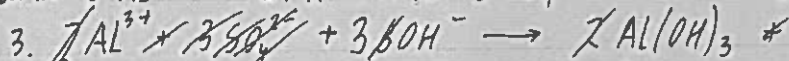
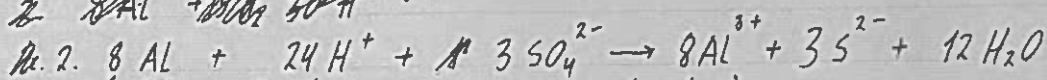
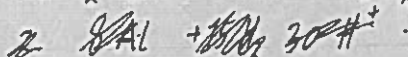


Вариант № 1

№1 (продолжение)



Сокращённые ионные:



№3

 $M_A = 70$

1120 мл

0,92

$$V_{CO_2} = \frac{1,12}{22,4} = 0,05 \text{ моль}$$

$$V_C = 0,05 \text{ моль}$$

$$V_{H_2O} = \frac{0,2}{18} = 0,05 \text{ моль}$$

$$V_H = 0,1 \text{ моль}$$

C

H

0,05

0,1

| · 100

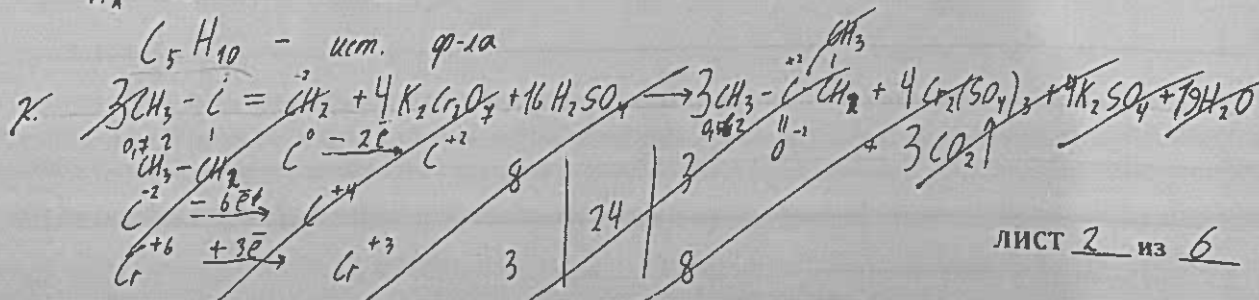
5

10

 $M_A = 70$

$$12 \cdot 5 + 10 \cdot 1 = 70$$

✓

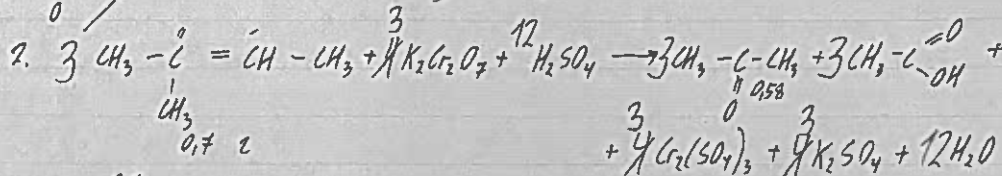
 C_5H_{10} - ист. ф-ла



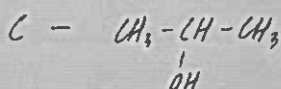
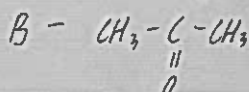
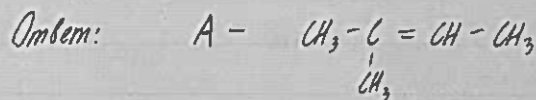
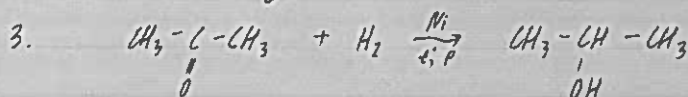
Вариант № 1

N3 (продолжение)

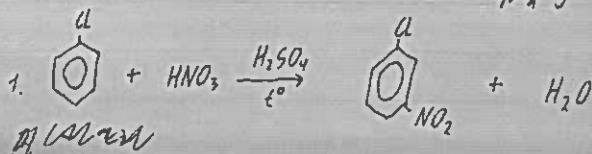
$$\begin{aligned} \Rightarrow \frac{d_A}{d_B} &= \frac{0,7}{70} = 0,01 \text{ моль} \\ \Rightarrow \frac{d_B}{d_A} &= 0,01 \text{ моль} \\ M_B &= \frac{0,56}{0,01} = 56 \\ \text{CH}_3-\text{C}(=\text{O})-\text{CH}_2-\text{CH}_3 & \quad 12 \cdot 4 + 8 \cdot 1 = 56 \end{aligned}$$



$$\begin{aligned} \Rightarrow \frac{d_A}{d_B} &= \frac{0,7}{70} = 0,01 \text{ моль} \\ \Rightarrow \frac{d_B}{d_A} &= 0,01 \text{ моль} \\ M_B &= \frac{0,56}{0,01} = 56 \\ \text{C}_3\text{H}_6\text{O} & \quad 12 \cdot 3 + 6 \cdot 1 + 16 \cdot 1 = 56 \\ \Rightarrow B &= \text{CH}_3-\text{C}(=\text{O})-\text{CH}_3 \end{aligned}$$



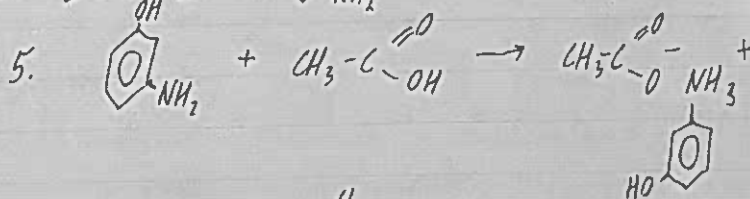
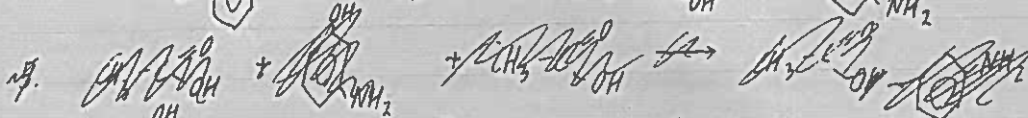
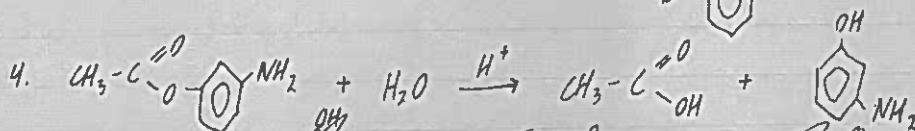
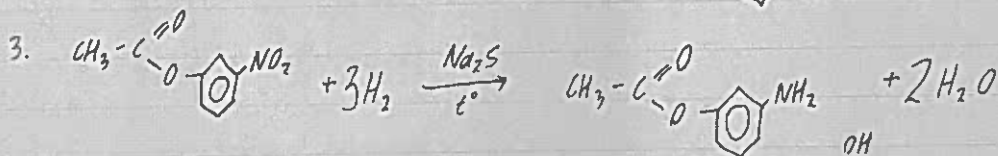
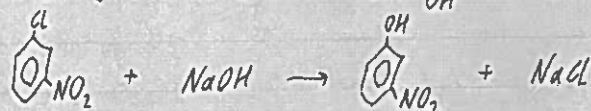
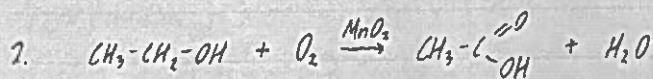
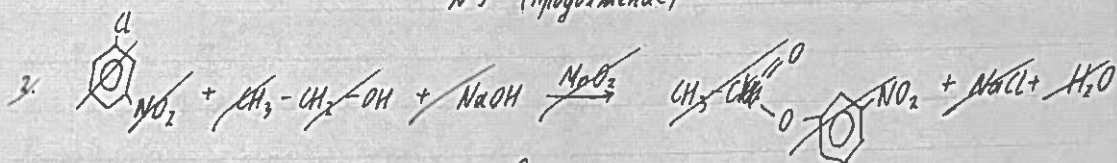
N45



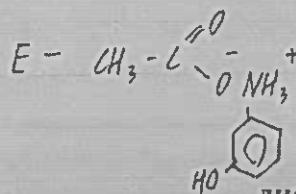
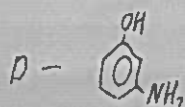
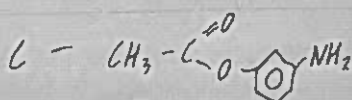
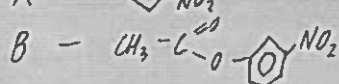


Вариант № 1

№5 (продолжение)



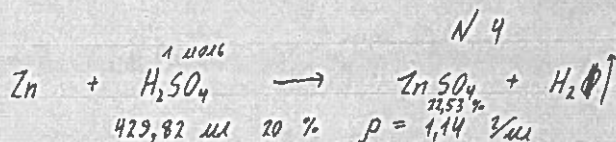
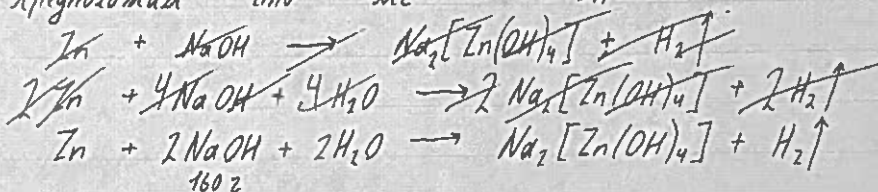
Ответ:



ЛИСТ 4 из 6



Вариант № 1

Предположим что $\text{Me} = \text{Zn}$ 

$$m_{\text{H}_2\text{SO}_4 \text{ р-ра}} = 429,82 \cdot 1,14 = 489,99 \text{ г}$$

$$m_{\text{H}_2\text{SO}_4} = 489,99 \cdot 0,2 = 98 \text{ г}$$

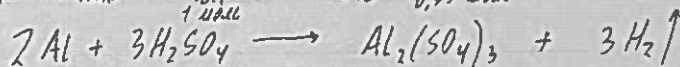
$$\nu_{\text{H}_2\text{SO}_4} = \frac{98}{98} = 1 \text{ моль}$$

$$w_{\text{ZnSO}_4} = 22,53 \% \quad w = \frac{m_{\text{в-ва}}}{m_{\text{р-ра}}} \cdot 100 \%$$

$$m_{\text{ZnSO}_4} = 1 \cdot 145 = 145 \text{ г}$$

$$m_{\text{р-ра}} = (65 \cdot 1) + 489,99 = 554,99 \text{ г}$$

$$w_{\text{ZnSO}_4} = \frac{145}{554,99} \cdot 100 \% = 26,13 \%$$

Предположим что $\text{Me} = \text{Al}$ 0,33 моль

$$\nu_{\text{Al}_2(\text{SO}_4)_3} = 0,33 \text{ моль}$$

$$m_{\text{Al}_2(\text{SO}_4)_3} = 0,33 \cdot 342 = 112,86 \text{ г}$$

$$m_{\text{р-ра}} = (27 \cdot 2) + 489,99 = 544,99 \text{ г}$$

$$w_{\text{Al}_2(\text{SO}_4)_3} = \frac{112,86}{544,99} = 20,71 \%$$

$$m_{\text{р-ра}} = (27 \cdot 0,66) + 489,99 = 505,81 \text{ г}$$

$$w_{\text{Al}_2(\text{SO}_4)_3} = \frac{112,86}{505,81} \cdot 100 \% = 22,31 \%$$

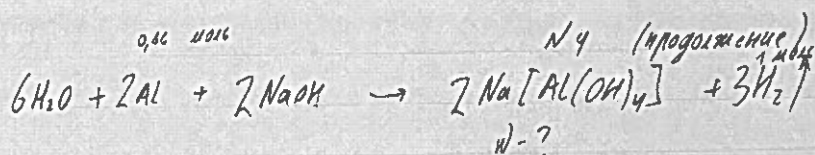
Да — Me — Al

X38-102



Олимпиада школьников «Гранит науки» Шифр работы _____
БЛАНК ОЛИМПИАДНОЙ РАБОТЫ

(не заполнять)

Вариант № 1

$$M_{\text{Na}[\text{Al}(\text{OH})_4]} = 0,66 \cdot 118 = 77,88 \text{ г}$$

$$m_{\text{г-ра}} = (27 \cdot 0,66) + 160 = 175,82$$

$$w = \frac{77,88}{175,82} \cdot 100\% = 44,3\%$$

Ответ: $w_{\text{Na}[\text{Al}(\text{OH})_4]} = 44,3\%$

Me - Al

продукт с целостью — $\text{Na}[\text{Al}(\text{OH})_4]$

