

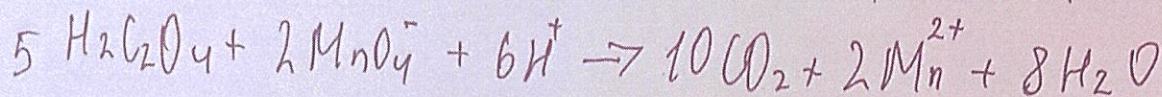
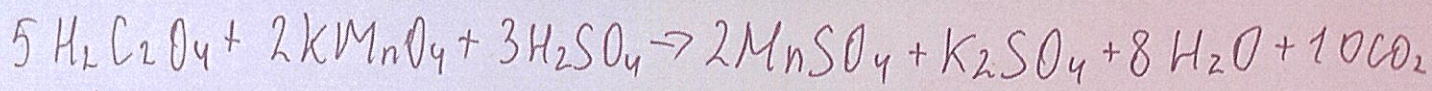
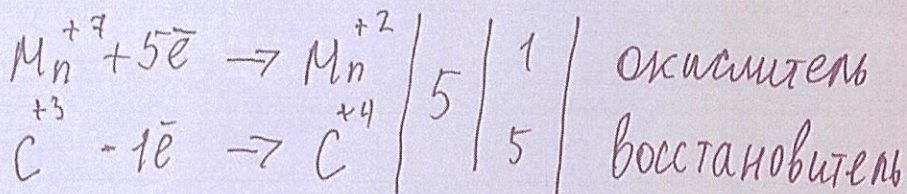
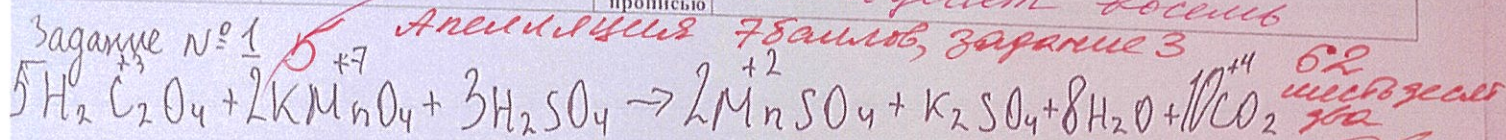


Оценка выполнения олимпиадной работы
(заполняется проверяющим)

№ задания		1	2	3	4	5	6	7	8	9	10	Σ
Полученный балл		5	8	3	20	22	—					
I проверка	Подпись проверяющего					Σ баллов прописью	нотодесет восемь					
	Подпись проверяющего					Σ баллов прописью						
II проверка	Подпись проверяющего					Σ баллов прописью	нотодесет восемь					
	Подпись проверяющего					Σ баллов прописью						

Σ 62

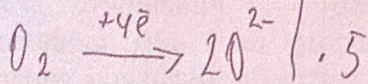
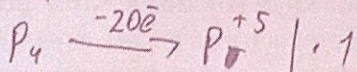
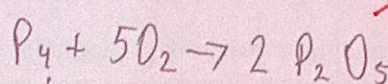
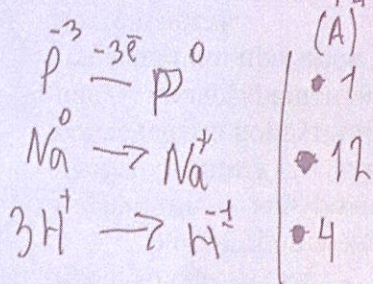
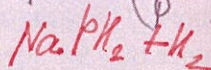
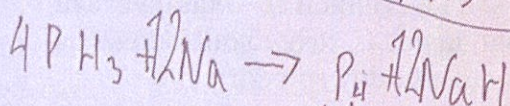
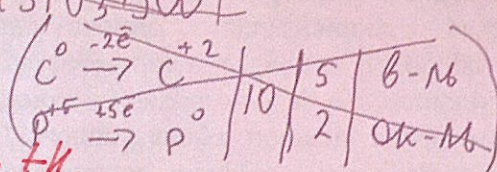
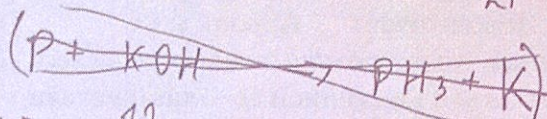
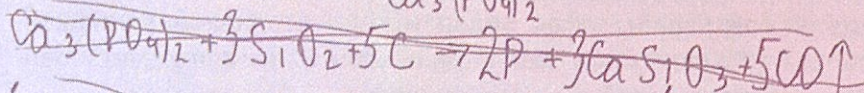
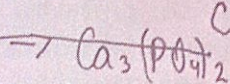
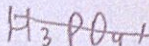
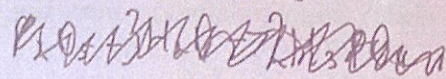
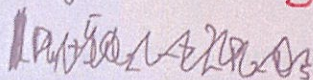
Задание № 1





Задание № 2 ~~2~~ 8

Вариант № 4

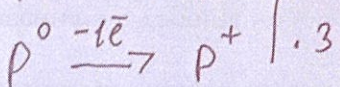
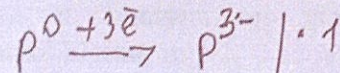
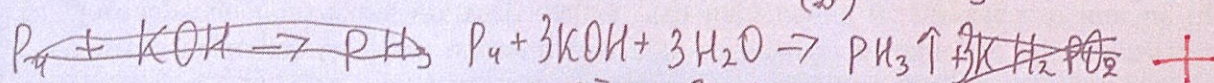
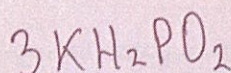
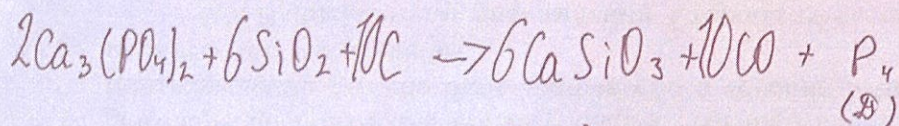
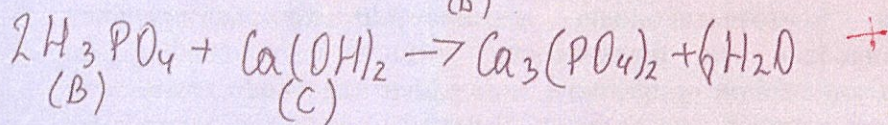
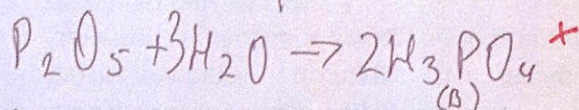


A - P_4

B - H_3PO_4

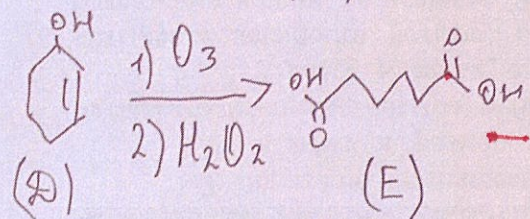
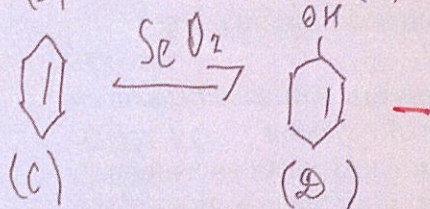
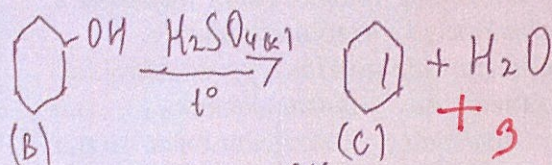
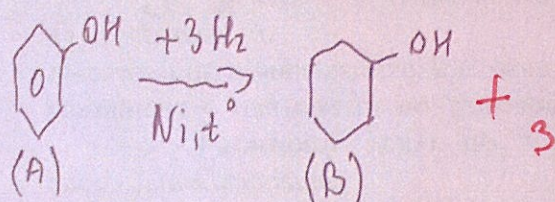
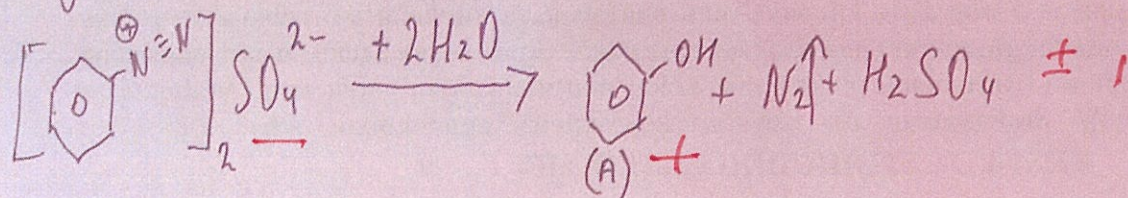
C - $Ca(OH)_2$

D - P_4

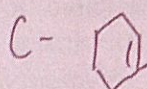
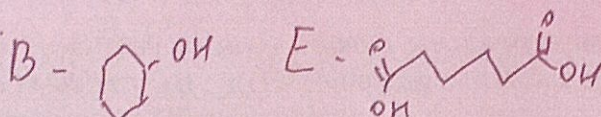
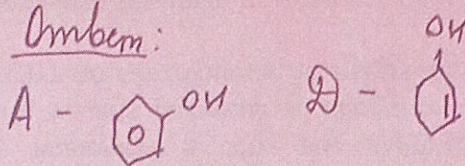


Вариант № 4

Задание № 3



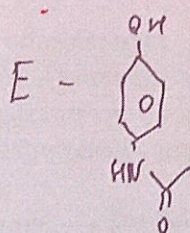
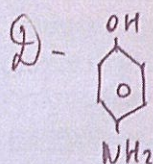
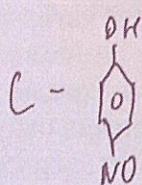
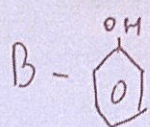
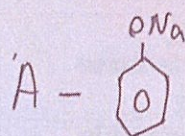
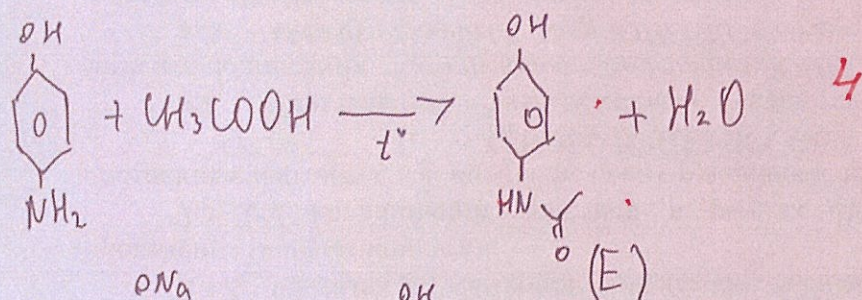
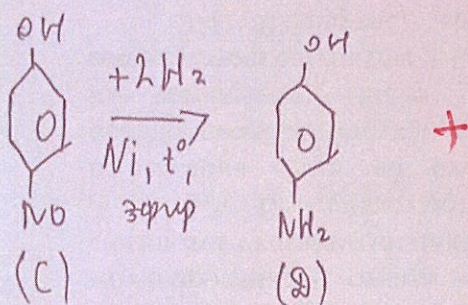
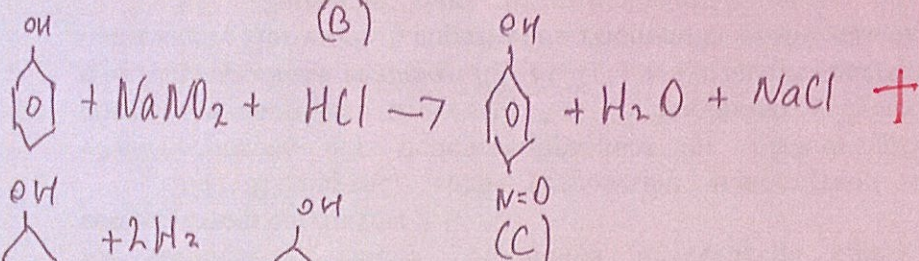
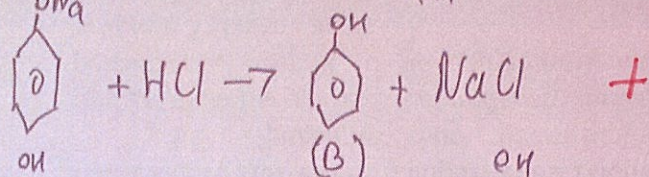
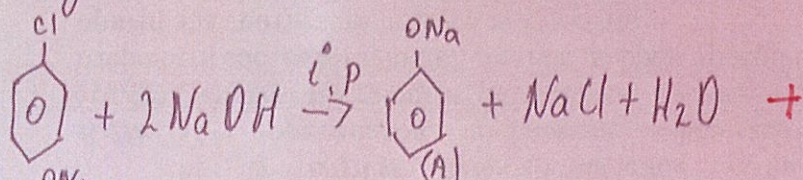
Ответ:





Задание №4 ²⁰

Вариант № 4





Вариант № 4

Задание № 5 **25-3**

Решение:

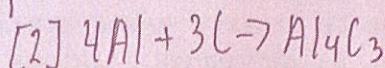
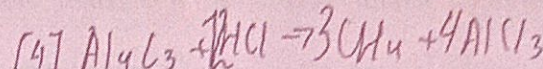
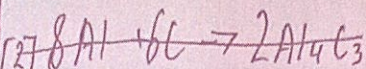
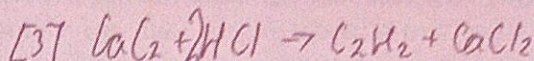
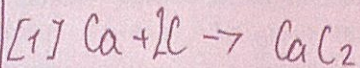
= 22 балла

Al и Ca

$$m(\text{смеси}) = 37,6 \text{ (г)}$$

$$w(\text{HCl}) = 0,1$$

$$V(\text{газа}) = 22,4 \text{ (л)}$$



↑
12

т.к. Al_4Cl_3 - метанид то выделяется CH_4

а. т.к. CaCl_2 - хлорид то выделяется H_2

$$n(\text{объ. газа}) = 1 \text{ моль}$$

$$\text{Пусть } n(\text{CH}_4) = x \text{ моль} \Rightarrow \text{тогда } n(\text{C}_2\text{H}_2) = 1 - x \text{ моль}$$

$$n(\text{CaCl}_2) = n(\text{Ca}) = n(\text{C}_2\text{H}_2) = 1 - x \text{ моль}$$

$$n(\text{Al}_4\text{Cl}_3) = \frac{1}{3} n(\text{CH}_4) = \frac{x}{3} \text{ моль}$$

$$\text{Тогда } n(\text{Al}) = \frac{4x}{3} \text{ моль}$$

$$m(\text{Ca}) = (1 - x) \cdot 40 = 40 - 40x \text{ (грамм)}$$

$$m(\text{Al}) = \frac{4x}{3} \cdot 27 = 36x \text{ (г)}$$

составим систему:

$$m(\text{Ca}) + m(\text{Al}) = m(\text{смеси})$$

$$40 - 40x + 36x = 37,6$$

$$x = 0,6$$

$$m(\text{Al}) = 36x = 36 \cdot 0,6 = 21,6 \text{ (г)}$$

$$m(\text{Ca}) = 40 - 40x = 40 - 40 \cdot 0,6 = 16 \text{ (г)}$$

$$n(\text{CH}_4) = x = 0,6 \text{ моль}$$

$$n(\text{C}_2\text{H}_2) = 1 - x = 1 - 0,6 = 0,4 \text{ моль}$$

$$\Rightarrow V(\text{CH}_4) = 0,6 \cdot 22,4 = 13,44 \text{ л}$$

$$V(\text{C}_2\text{H}_2) = 0,4 \cdot 22,4 = 8,96 \text{ л}$$

$$\text{Ответ: } m(\text{Al}) = 21,6 \text{ (г)} \quad V(\text{CH}_4) = 13,44 \text{ л}$$

$$m(\text{Ca}) = 16 \text{ (г)} \quad V(\text{C}_2\text{H}_2) = 8,96 \text{ л}$$