


$$E=mc^2$$
C

ШИФР 2866

[illegible][illegible][illegible]

Номер варианта	6		
----------------	---	--	--

ШИФР

2866

Класс 11a Вариант 6 Дата Олимпиады 18.02.2017

Площадка написания УГНТУ

Задача	1	2	3	4	5	6	Σ		Подпись
							Цифрой	Прописью	
Оценка	5	2,5	3,5	4	5	1	21	двадцать один	Бунеев Игорь

№1.

Дано:

$$m_{\text{см}} = 60 \text{ г}$$

$$V_1 = 5,6 \text{ л}$$

$$\omega(\text{BaO}) = ?$$

Решение:



$$n(\text{BaCO}_3) = n(\text{CO}_2) \text{ по уравнению}$$

$$n(\text{CO}_2) = \frac{V_1}{V_m} = \frac{5,6 \text{ л}}{22,4 \text{ л/моль}} = 0,25 \text{ моль} = n(\text{BaCO}_3) \Rightarrow$$

$$\Rightarrow m(\text{BaCO}_3) = 0,25 \text{ моль} \cdot 197 \text{ г/моль} = 49,25 \text{ г}$$

$$m(\text{BaO}) = m_{\text{см}} - m(\text{BaCO}_3)$$

$$m(\text{BaO}) = 60 \text{ г} - 49,25 \text{ г} = 10,75 \text{ г}$$

$$\omega(\text{BaO}) = \frac{m(\text{BaO})}{m_{\text{см}}} \cdot 100\%$$

$$\omega(\text{BaO}) = \frac{10,75 \text{ г}}{60 \text{ г}} \cdot 100\% = 17,92\%$$

$$\text{Ответ: } 17,92\%$$

55

№4.

Дано:

$$V(\text{C}_n\text{H}_m) = 0,5 \text{ л}$$

$$V(\text{CO}_2) = 2 \text{ л}$$

$$m(\text{H}_2\text{O}) = 2,000 \text{ г}$$

$$\text{C}_n\text{H}_m = ?$$

Решение:



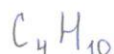
$$\frac{\nu(\text{C}_n\text{H}_m)}{\nu(\text{CO}_2)} = \frac{V(\text{C}_n\text{H}_m) \cdot V_m}{V_m \cdot V(\text{CO}_2)} = \frac{0,5 \text{ л}}{2 \text{ л}} = \frac{1}{4}$$

$$4\nu(\text{C}_n\text{H}_m) = \nu(\text{CO}_2) = n \cdot \nu(\text{C}_n\text{H}_m) \Rightarrow n = 4$$

$$\nu(\text{H}_2\text{O}) = \frac{m(\text{H}_2\text{O})}{M(\text{H}_2\text{O})}$$

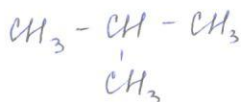
$$\frac{\nu(\text{C}_n\text{H}_m)}{\nu(\text{H}_2\text{O})} = \frac{V(\text{C}_n\text{H}_m) \cdot M(\text{H}_2\text{O})}{V_m \cdot m(\text{H}_2\text{O})} = \frac{0,5 \cdot 18 \text{ г/моль}}{22,4 \text{ л/моль} \cdot 2,009 \text{ г}} = \frac{1}{5}$$

$$5 \nu(\text{C}_n\text{H}_m) = \nu(\text{H}_2\text{O}) = \frac{\nu(\text{H})}{2} = \frac{5 \cdot \nu(\text{H})}{m} \Rightarrow m = 10$$



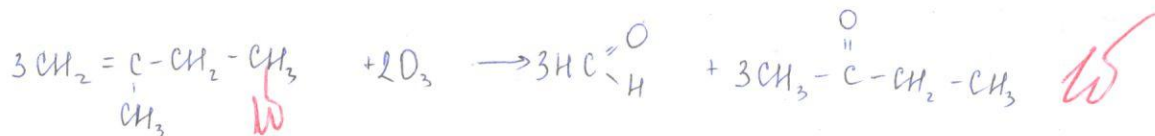
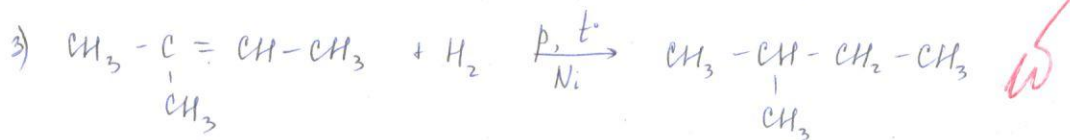
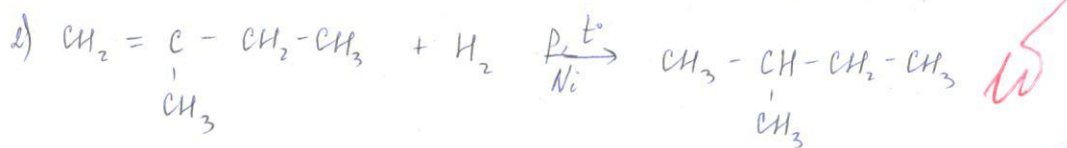
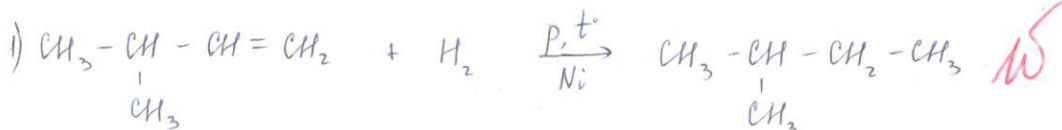
$$\omega(\text{C}) = \frac{4 \cdot 12 \text{ г/моль}}{4 \cdot 12 \text{ г/моль} + 10 \cdot 1 \text{ г/моль}} \cdot 100\% = 82,76\%$$

$$\omega(\text{H}) = \frac{10 \cdot 1 \text{ г/моль}}{4 \cdot 12 \text{ г/моль} + 10 \cdot 1 \text{ г/моль}} \cdot 100\% = 17,24\%$$



Ответ: C_4H_{10} ; $\omega(\text{C}) = 82,76\%$
бутан $\omega(\text{H}) = 17,24\%$

н 5.

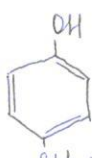
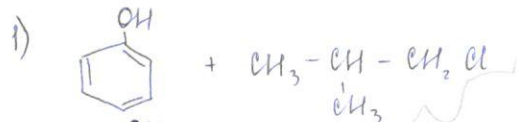
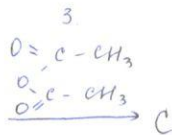
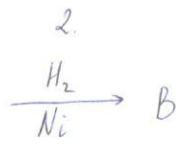
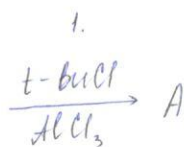
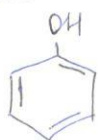


$\Sigma = 50$

Ответ: $\begin{array}{c} \text{CH}_2 = \text{C} - \text{CH}_2 - \text{CH}_3 \\ | \\ \text{CH}_3 \end{array}$

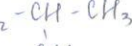
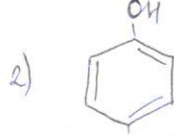
ШИФР 2866

№2.

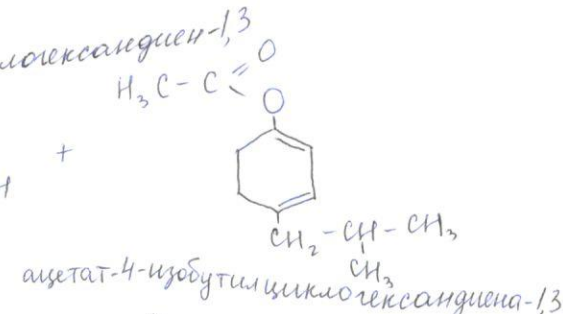
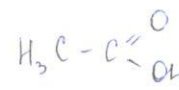
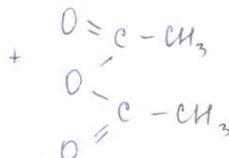
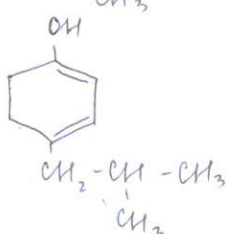


+ HCl

4-изобутилфенол

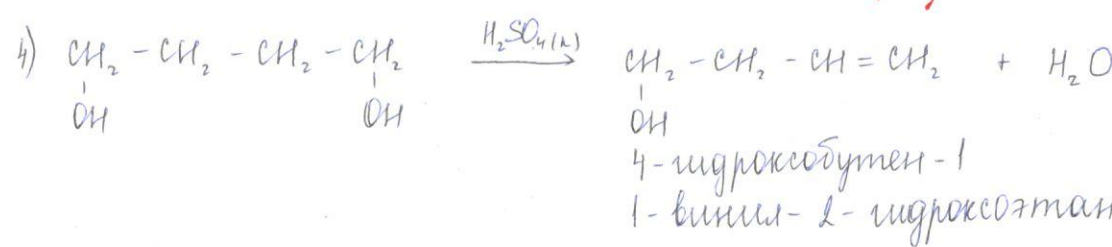
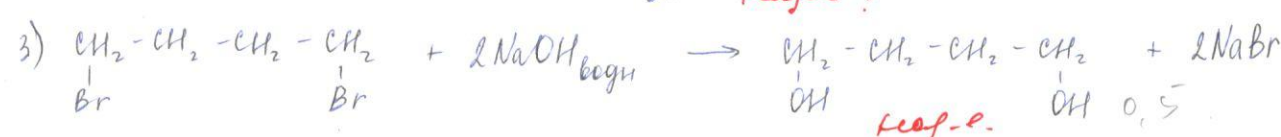
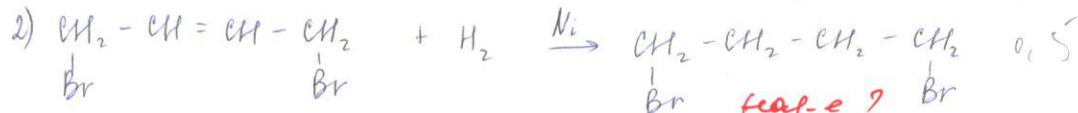
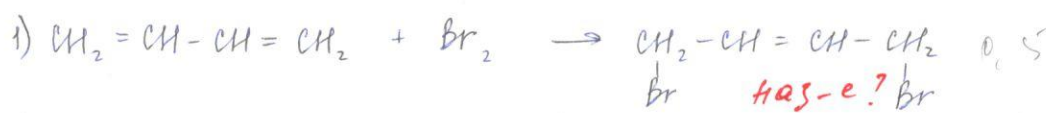
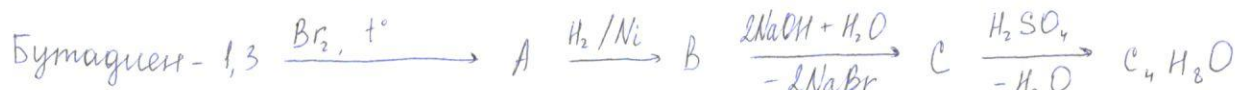


3)

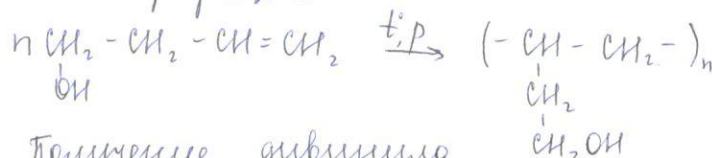


2, 5.

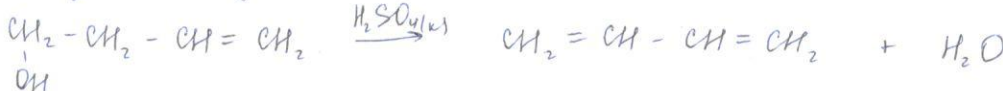
№3.



1. Полимеризация

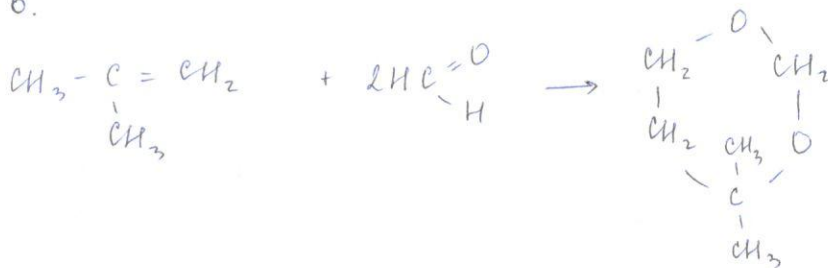


2. Получение дивинила

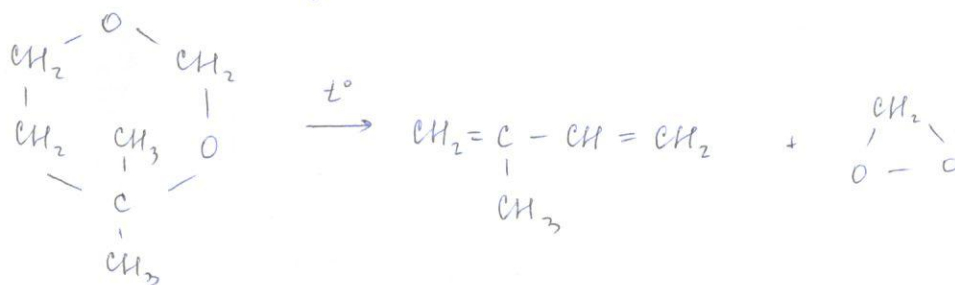


2, 5.

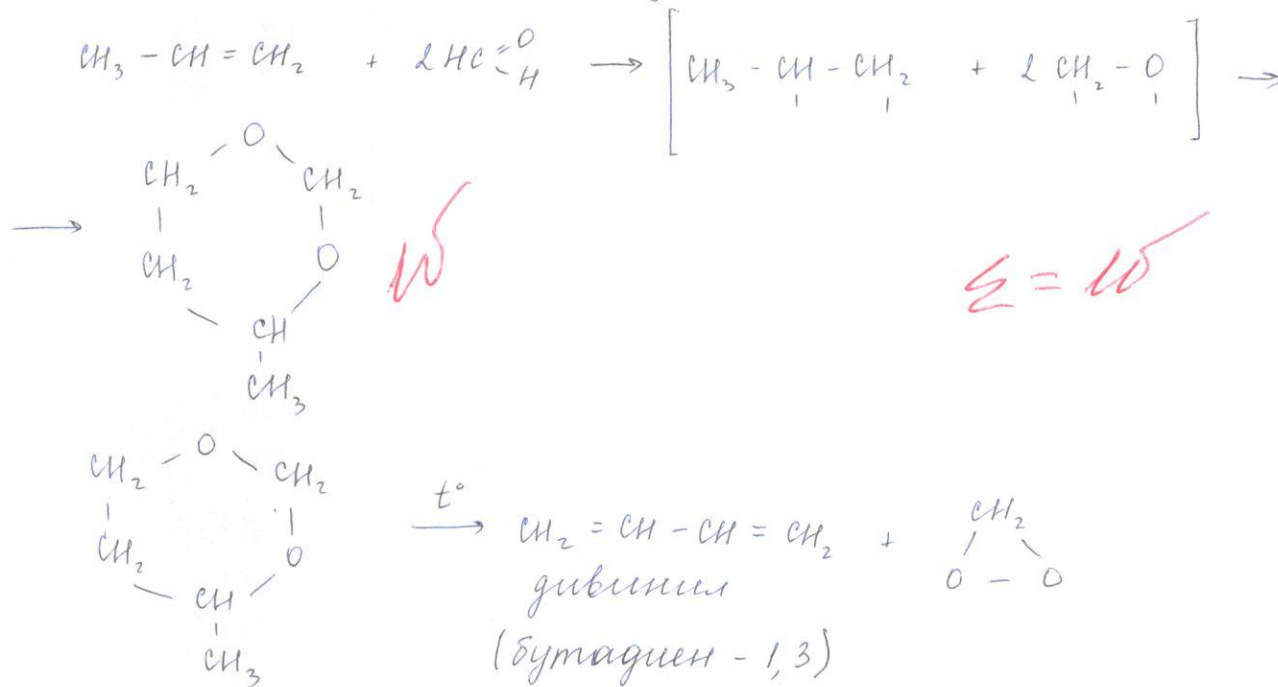
№ 6.



Получение изопреена:



Получение 4-метил-1,3-диоксана:



Ответ: бутадиен - 1,3.