YUKON CHEMISTRY 11 (MCH--11) · UNIT C · 25 QUESTIONS

Chemical Reactions and Stoichiometry — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **Which equation is balanced**

- **A** $H_2 + O_2 \rightarrow H_2O$
- **B** $2H_2 + O_2 \rightarrow 2H_2O$
- **C** $H_2 + O_2 \rightarrow 2H_2O$
- **D** $2H_2 + 2O_2 \rightarrow 2H_2O$

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2 **In the balanced equation $2H_2+O_2 \rightarrow 2H_2O$, the sum of all coefficients is ____**

ANSWER _____

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3 **The balanced equation for the combustion of propane is**

- **A** $C_3H_8+4O_2 \rightarrow 3CO_2+4H_2O$
- **B** $C_3H_8+5O_2 \rightarrow 3CO_2+3H_2O$
- **C** $C_3H_8+5O_2 \rightarrow 3CO_2+4H_2O$
- **D** $C_3H_8+3O_2 \rightarrow 3CO_2+4H_2O$

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4 **In the balanced equation for propane combustion, the sum of all coefficients is ____**

ANSWER _____

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5 **Which equation is a balanced reaction of iron oxide with carbon monoxide**

- **A** $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$
- **B** $Fe_2O_3 + CO \rightarrow 2Fe + CO_2$
- **C** $Fe_2O_3 + 3CO \rightarrow Fe + 3CO_2$
- **D** $Fe_2O_3 + 2CO \rightarrow 2Fe + 2CO_2$

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6 **Which aluminium chloride equation is balanced**

- **A** $2Al + 3Cl_2 \rightarrow 2AlCl_3$
- **B** $Al + Cl_2 \rightarrow AlCl_3$
- **C** $2Al + Cl_2 \rightarrow 2AlCl_3$
- **D** $Al + 3Cl_2 \rightarrow AlCl_3$

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7 **When magnesium and oxygen combine to form magnesium oxide, the reaction type is**

- A synthesis
- B decomposition
- C combustion
- D double replacement

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8 **When calcium carbonate breaks down into calcium oxide and carbon dioxide, the reaction type is**

- A synthesis
- B decomposition
- C single replacement
- D combustion

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9 **When zinc reacts with hydrochloric acid to form zinc chloride and hydrogen, the reaction type is**

A double replacement

B synthesis

C single replacement

D decomposition

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10 **When silver nitrate reacts with sodium chloride to form silver chloride and sodium nitrate, the type is**

A synthesis

B combustion

C decomposition

D double replacement

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11 When methane burns in oxygen to form carbon dioxide and water, the reaction type is

- A combustion
- B synthesis
- C decomposition
- D single replacement

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12 In a closed container, 10 g of reactant A reacts with 15 g of reactant B to form one product. The mass of product, in grams, is ____

ANSWER _____

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13 $2H_2 + O_2 \rightarrow 2H_2O$.
The amount of water formed from 4 moles of hydrogen, in moles, is ____

ANSWER _____

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14 **$2Mg + O_2 \rightarrow 2MgO$.**
The mass of magnesium oxide formed from 48 g of magnesium, in grams, is ____

ANSWER _____

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15 **$2H_2 + O_2 \rightarrow 2H_2O$.**
With 10 moles of hydrogen and 3 moles of oxygen, the limiting reactant is

A hydrogen

B oxygen

C water

D neither reactant

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16 **$2H_2 + O_2 \rightarrow 2H_2O$.**
With 10 moles of hydrogen and 3 moles of oxygen, the amount of water formed, in moles, is ____

ANSWER _____

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17 **$2Mg + O_2 \rightarrow 2MgO$.**
With 24 g of magnesium and 32 g of oxygen, the mass of magnesium oxide formed, in grams, is _____

ANSWER _____

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18 **A reaction has a theoretical yield of 50 g and an actual yield of 40 g. The percent yield is _____**

ANSWER _____

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19 **A reaction has a theoretical yield of 20 g and an actual yield of 17 g. The percent yield is _____**

ANSWER _____

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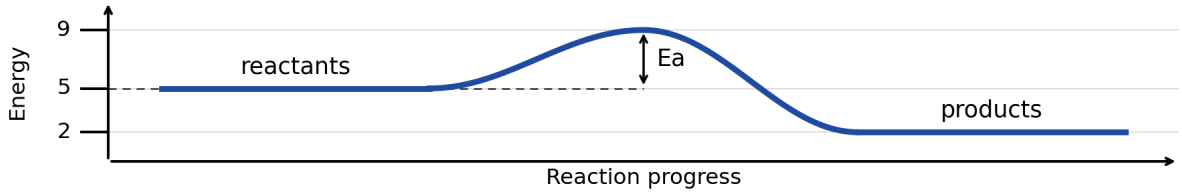
20 **The diagram shows the energy profile of a reaction. Reactants are at 5, the peak is at 9, and products are at 2. The activation energy, in the diagram units, is _____**



ANSWER _____

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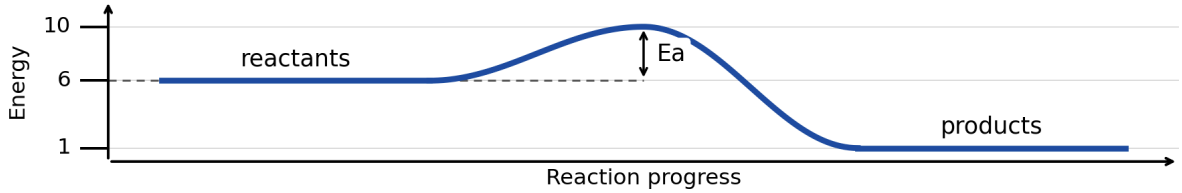
21 **The diagram shows the energy profile of a reaction. Reactants are at 6, the peak is at 10, and products are at 1. The energy released, in the diagram units, is _____**



ANSWER _____

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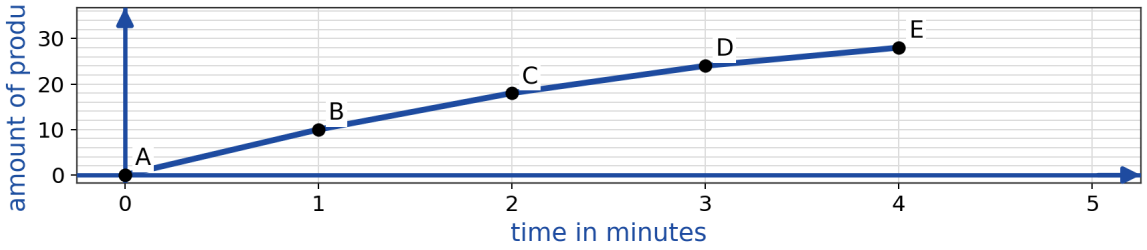
22 **The graph shows the amount of product formed during a reaction. The amount at 3 minutes, in the graph units, is _____**



ANSWER

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23 **Which equation is a balanced double replacement reaction**

A $AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$

B $AgNO_3 + NaCl \rightarrow AgCl_2 + NaNO_3$

C $2AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$

D $AgNO_3 + 2NaCl \rightarrow AgCl + 2NaNO_3$

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24 **Which equation is a balanced decomposition reaction**

- **A** $2H_2O_2 \rightarrow 2H_2O + O_2$
- **B** $H_2O_2 \rightarrow H_2O + O_2$
- **C** $H_2O_2 \rightarrow 2H_2O + O_2$
- **D** $2H_2O_2 \rightarrow H_2O + O_2$

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25 **A synthesis reaction is one in which**

- **A** two or more reactants combine to form one product
- **B** one compound breaks into simpler substances
- **C** an acid and a base form a salt
- **D** electrons move through a wire

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ANSWER KEY

1.	B	**10.**	D	**19.**	85
2.	5	**11.**	A	**20.**	4
3.	C	**12.**	25	**21.**	5
4.	13	**13.**	4	**22.**	24
5.	A	**14.**	80	**23.**	A
6.	A	**15.**	B	**24.**	A
7.	A	**16.**	6	**25.**	A
8.	B	**17.**	40		
9.	C	**18.**	80		

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