BRITISH COLUMBIA SCIENCE 10 · UNIT B · 25 QUESTIONS

Chemical Processes — 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 **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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2 **Which equation is a balanced synthesis reaction**

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

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3 **When limestone is heated, it breaks down as follows.**

$CaCO_3 \rightarrow CaO + CO_2$

This reaction is a

A decomposition reaction

B synthesis reaction

C neutralization reaction

D combustion reaction

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4 **Which equation is a balanced single replacement reaction**

A $Zn + HCl \rightarrow ZnCl_2 + H_2$

B $Zn + HCl \rightarrow ZnCl + H_2$

C $Zn + 2HCl \rightarrow ZnCl + H_2$

D $Zn + 2HCl \rightarrow ZnCl_2 + H_2$

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

- **A** $AgNO_3 + NaCl \rightarrow AgCl_2 + NaNO_3$
- **B** $AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$
- **C** $AgNO_3 + NaCl \rightarrow Ag + NaNO_3 + Cl_2$
- **D** $AgNO_3 + 2NaCl \rightarrow AgCl + NaNO_3$

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6 **Which equation is a balanced combustion reaction for methane**

- **A** $CH_4 + O_2 \rightarrow CO_2 + H_2O$
- **B** $CH_4 + 2O_2 \rightarrow CO_2 + H_2O$
- **C** $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$
- **D** $CH_4 + O_2 \rightarrow CO + 2H_2O$

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7 **Which equation is a balanced neutralization reaction**

- **A** $HCl + NaOH \rightarrow NaCl + H_2O$
- **B** $HCl + NaOH \rightarrow NaCl + H_2$
- **C** $2HCl + NaOH \rightarrow NaCl + H_2O$
- **D** $HCl + NaOH \rightarrow NaCl_2 + H_2O$

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8 **Which equation is a balanced decomposition of hydrogen peroxide**

- **A** $H_2O_2 \rightarrow H_2O + O_2$
- **B** $H_2O_2 \rightarrow 2H_2O + O_2$
- **C** $H_2O_2 \rightarrow H_2 + O_2$
- **D** $2H_2O_2 \rightarrow 2H_2O + O_2$

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9 **In a closed container, 4 g of hydrogen reacts completely with 32 g of oxygen. The mass of water formed, in grams, is ____**

ANSWER _____

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10 **In a closed container, 12 g of magnesium reacts completely with 8 g of oxygen. The mass of magnesium oxide formed, in grams, is ____**

ANSWER _____

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11 **A solution with pH 3 is**

A neutral

B acidic

C basic

D pure water

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12 **A solution with pH 11 is**

A strongly acidic

B neutral

C basic

D pure water

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13 **The products of a neutralization reaction are a**

A salt and water

B salt and hydrogen

C base and oxygen

D acid and water

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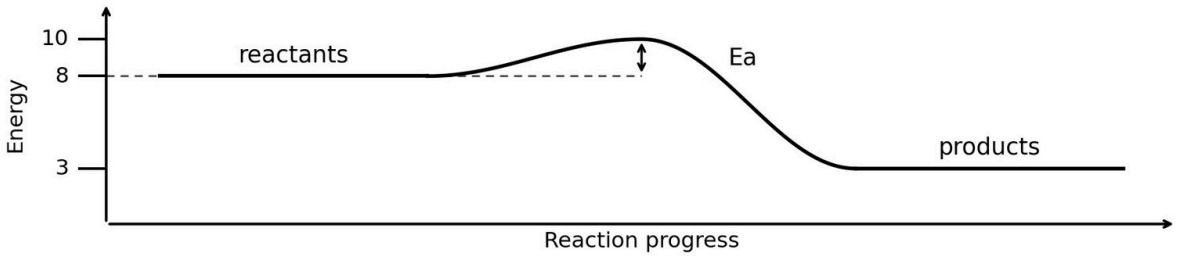
14 **The diagram shows the energy profile for a reaction. Reactants are at 8, the peak is at 10, and products are at 3. The energy released, in the diagram units, is _____**



Question 14

The diagram shows the energy profile for a reaction. Reactants are at 8, the peak is at 10, and products are at 3. The energy released, in the diagram units, is ____

ANSWER

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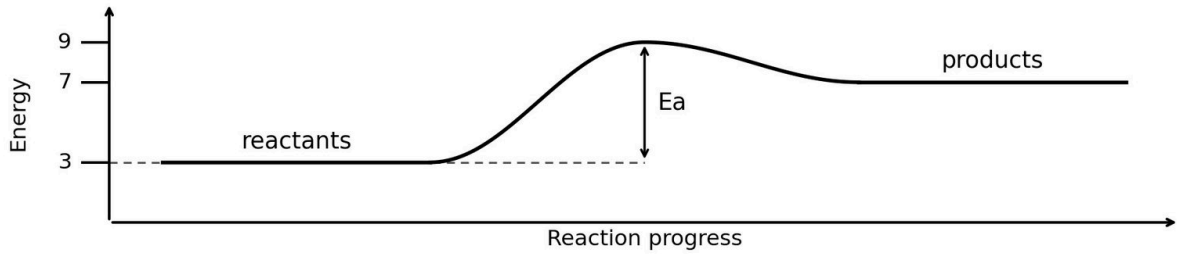
15 **The diagram shows the energy profile for a reaction. Reactants are at 3, the peak is at 9, and products are at 7. The energy absorbed, in the diagram units, is**



Question 15

The diagram shows the energy profile for a reaction. Reactants are at 3, the peak is at 9, and products are at 7. The energy absorbed, in the diagram units, is

A) 2

B) 6

C) 10

D) 4

A 2

B 6

C 10

D 4

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16 **Activation energy is the**

A total energy stored in the products

B minimum energy needed to start a reaction

C energy released when bonds form

D heat lost to the surroundings

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17 **A hand warmer gives off heat as chemicals react inside it. It is an example of an**

A endothermic process

B neutralization only

C exothermic process

D decomposition only

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18 **An instant cold pack feels cold because the reaction inside it**

- **A** absorbs heat from the surroundings
- **B** releases heat to the surroundings
- **C** produces no energy change
- **D** burns fuel

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19 **Mixing ammonia cleaner with bleach is dangerous because the mixture can release**

- **A** harmless water vapour
- **B** extra cleaning power only
- **C** a pleasant scent
- **D** toxic gases that harm the lungs

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20 **The safest first step before using an unfamiliar household cleaner is to**

A mix it with another cleaner to test it

B read the label and follow its safety directions

C heat it to make it work faster

D pour it down a drain to check the smell

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21 **Vinegar mixed with baking soda fizzes because the reaction produces**

A oxygen gas

B hydrogen gas

C carbon dioxide gas

D nitrogen gas

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22 **Rusting of iron is an example of slow**

A oxidation

B neutralization

C decomposition

D melting

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23 **The graph shows the temperature of a reacting mixture over time. Between minute 0 and minute 3, the temperature**

A fell from 42 to 20

B stayed at 20

C rose from 20 to 36

D rose from 20 to 42

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24 **An antacid tablet relieves excess stomach acid because it**

- A adds more acid to the stomach
- B neutralizes some of the stomach acid
- C coats food so it cannot digest
- D removes water from the stomach

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25 **A reaction has products at a higher energy than its reactants. This means the reaction**

- A releases energy
- B needs no activation energy
- C absorbs energy
- D cannot occur

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ANSWER KEY

1. A
2. C
3. A
4. D
5. B
6. C
7. A
8. D
9. 36
10. 20
11. B
12. C
13. A
14. 5
15. D
16. B
17. C
18. A
19. D
20. B
21. C
22. A
23. D
24. B
25. C

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