Lesson 11 - Review 1

Chemistry - Key Stage 3

Energetics

Miss Charlton

What has to happen to particles before they react?

A

Break apart

B

Slow down

C

Explode

D

Collide

What do all rate of reaction practical have to do?

A

Measure a change over time

B

Time how long it takes for a precipitate to be formed

C

Time how long it takes for a reactant to be used up

D

Time how quick a product is made

What is activation energy?

A

The energy given out when new bonds are formed

B

The maximum amount of energy a reaction needs to start

C

The minimum amount of energy a reaction needs to start

D

The energy taken in when bonds are broken

The rate of reaction is...

A

Quick all the way through every reaction

B

The same speed through a reaction

C

Quickest at the start of the reaction then slows down

D

Slowest at the start of the reaction then speeds up

Which one decreases the rate of reaction?

A

Particles have more kinetic energy

B

Use of a catalyst

C

Larger surface area of reactants

D

Lower concentration of reactants

Which one increases the rate of reaction?

A

Particles have less kinetic energy

B

Use of a gas syringe

C

Larger surface area of reactants

D

Lower concentration of reactants

The dependent variable is?

A

The variable we measure

B

The variable we change

C

The variable we control

D

The variable we keep the same

Increasing the surface area...

A

Decreases the rate of reaction

B

Increases the number of successful collisions

C

Increases the concentration of particles

D

Increases the number of particles

Decreasing the concentration...

A

Increases the rate of reaction

B

Increases the number of successful collisions

C

Decreases the number of particles

D

Increases the number of particles

Finish the equation:

Potassium carbonate → …… …… + carbon dioxide

A	B
Potassium dioxide	Potassium oxide
C	**D**
Potassium sulphate	Potassium chloride

During endothermic reactions...

A

The temperature of the surroundings increases

B

The temperature of the surroundings decreases

C

The particles decrease in temperature

D

The particle temperature increases

During exothermic reactions...

A

Bonds are broken

B

Bonds are made then broken

C

Bonds are made

D

Bonds are broken and made

The products of complete combustion are?

A

Carbon dioxide and water

B

Carbon monoxide and water

C

Carbon, water and soot

D

Carbon minoxide and water

Correct the incorrect or poor statement

Incorrect or poor statement	Correct statement
A reaction happens when reactants collide **...**	
Increasing the concentration increases the rate of reaction because there are **more collisions**	
The test for oxygen is to put **a blown out** splint into the gas and if it relights, its oxygen	
Complete combustion **produces** more energy than incomplete combustion	

Correct the incorrect or poor statement

Incorrect or poor statement	Correct statement
2 control variables when testing the effect of surface area on the rate of reaction between HCl and calcium carbonate are: The **amount** of carbonate The **amount** of acid	
The test for carbon dioxide is to **put a lit splint inside it and if the flame goes out,** it's carbon dioxide	
When investigating endothermic reactions a polystyrene cup is better because it **stops** energy being **lost** to the environment	

Identify the equation:

$$4CH_4 + 5O_2 \rightarrow 2CO + 2C + 8H_2O$$

Identify the equation:

$$CuCO_3 \rightarrow CuO + CO_2$$

Identify the equation:

Mg + O → MgO

Identify the equation:

$$K_2CO_3 \rightarrow K_2O + CO_2$$

Identify the equation:

$$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$$

Answers

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Carbon dioxide and water

B

Carbon monoxide and water

C

Carbon, water and soot

D

Carbon minoxide and water

Correct the incorrect or poor statement

Incorrect or poor statement	Correct statement
A reaction happens when reactants collide **...**	A reaction happens when reactants collide with enough energy to start a reaction (activation energy)
Increasing the concentration increases the rate of reaction because there are **more collisions**	Increasing the concentration increases the rate of reaction because there are more frequent collisions
The test for oxygen is to put **a blown out** splint into the gas and if it relights, its oxygen	The test for oxygen is a **glowing** splint relights when put into oxygen gas
Complete combustion **produces** more energy than incomplete combustion	Complete combustion **releases** more energy than incomplete combustion

Correct the incorrect or poor statement

Incorrect or poor statement	Correct statement
2 control variables when testing the effect of surface area on the rate of reaction between HCl and calcium carbonate are: The **amount** of carbonate The **amount** of acid	The **mass** of carbonate The **volume** of acid
The test for carbon dioxide is to **put a lit splint inside it and if the flame goes out,** it's carbon dioxide	The test for carbon dioxide is to bubble it through lime water and if the lime water goes cloudy, the gas is CO_2
When investigating endothermic reactions a polystyrene cup is better because it **stops** energy being **lost** to the environment	When investigating endothermic reactions, a polystyrene cup is better because it **cuts down** on energy being **taken in** from the environment

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Incomplete combustion

Identify the equation:

$$CuCO_3 \rightarrow CuO + CO_2$$

Thermal decomposition

Identify the equation:

Mg + O → MgO

<u>Oxidation</u>

Identify the equation:

$K_2CO_3 \rightarrow K_2O + CO_2$

Thermal decomposition

Identify the equation:

$$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$$

<u>Complete combustion</u>