

EXOTHERMIC AND ENDOTHERMIC REACTIONS

1 Which statements about exothermic and endothermic reactions are correct?

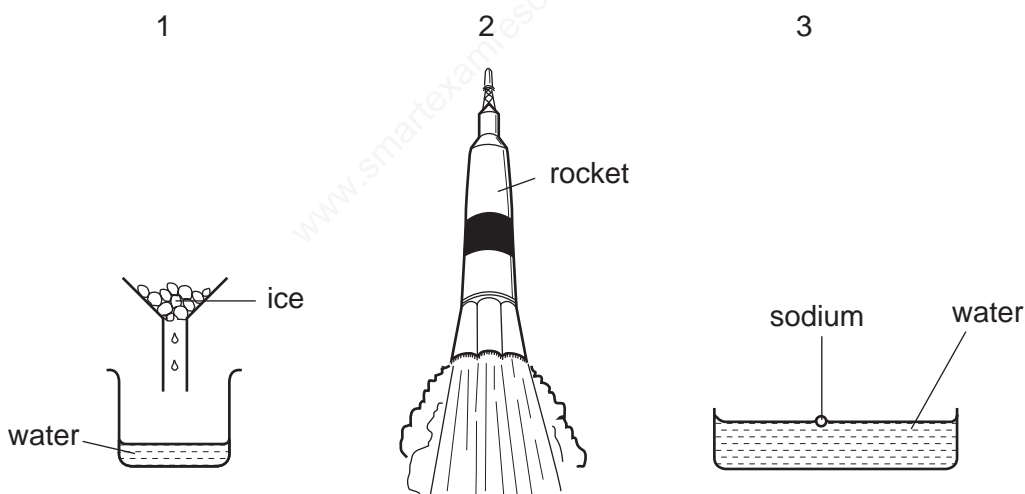
- 1 During an exothermic reaction, heat is given out.
- 2 The temperature of an endothermic reaction goes up because heat is taken in.
- 3 Burning methane in the air is an exothermic reaction.

A 1, 2 and 3 B 1 and 2 only C 1 and 3 only D 2 and 3 only

2 Which statement describes an exothermic reaction?

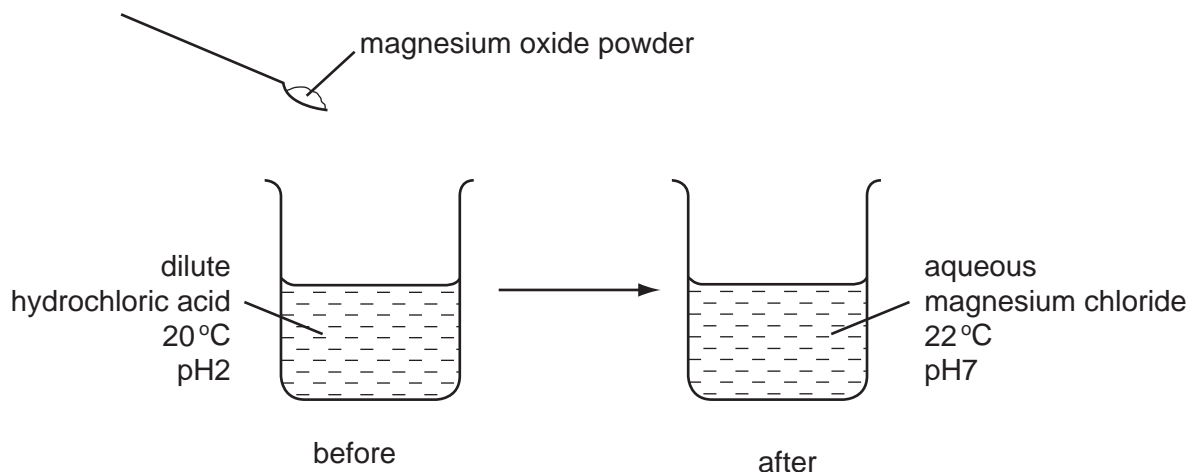
- A The energy absorbed for bond breaking is greater than the energy released by bond formation.
- B The energy absorbed for bond breaking is less than the energy released by bond formation.
- C The energy released by bond breaking is greater than the energy absorbed for bond formation.
- D The energy released by bond breaking is less than the energy absorbed for bond formation.

3 Which diagrams show a process in which an exothermic change is taking place?



- A 1 and 2 only
- B 1 and 3 only
- C 2 and 3 only
- D 1,

4 The diagram shows an experiment in which magnesium oxide powder is added to dilute hydrochloric acid.



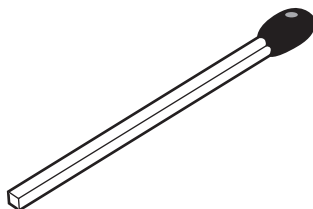
5 Which terms describe the experiment?

	exothermic	neutralisation
<input checked="" type="checkbox"/> A	✓	✓
<input type="checkbox"/> B	✓	x
<input type="checkbox"/> C	x	✓
<input type="checkbox"/> D	x	x

6 Coal, methane and hydrogen are burned as fuels. Which descriptions of this process are correct?

	what happens to the fuel	type of reaction
<input type="checkbox"/> A	oxidised	endothermic
<input checked="" type="checkbox"/> B	oxidised	exothermic
<input type="checkbox"/> C	reduced	endothermic
<input type="checkbox"/> D	reduced	exothermic

7 The diagram shows a match.

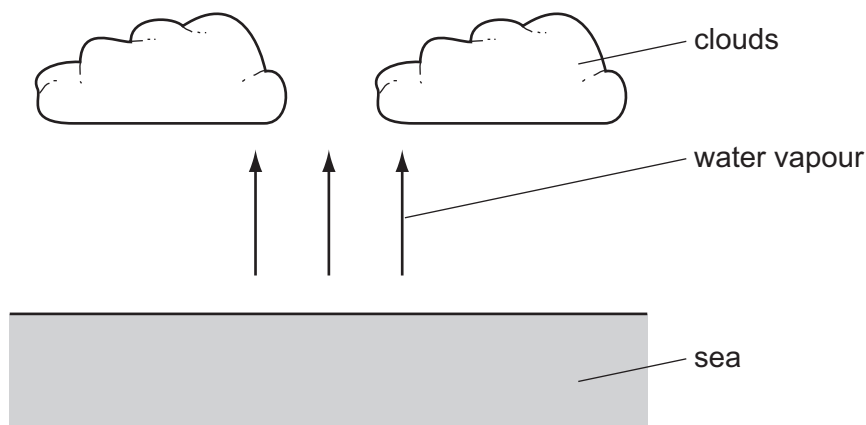


By striking the match, a chemical reaction takes place.

Which statements about the chemical reaction are correct?

	type of reaction	reason
<input type="checkbox"/> A	endothermic	because energy is used to strike the match
<input type="checkbox"/> B	endothermic	because energy is given out as the match burns
<input type="checkbox"/> C	exothermic	because energy is used to strike the match
<input checked="" type="checkbox"/> D	exothermic	because energy is given out as the match burns

8 Clouds are formed when water vapour evaporates from the sea.



What is the energy change and what name is given to the type of change when water evaporates?

	energy change	type of change
A	energy given out	endothermic
B	energy given out	exothermic
<input checked="" type="checkbox"/> C	energy taken in	endothermic
D	energy taken in	exothermic

9 Which process is **not** exothermic?

- A** burning a fossil fuel
- B** obtaining lime from limestone
- C** radioactive decay of ^{235}U
- D** reacting hydrogen with oxygen

10 Some white anhydrous copper(II) sulfate powder is put into a beaker of water and stirred.

What would show that the process was exothermic?

- A** A blue solution is formed.
- B** The beaker feels cooler.
- C** The beaker feels warmer.
- D** The powder dissolves in the water.

11 Plant cells use energy from sunlight for photosynthesis.

Which row describes and explains the energy change that occurs?

	type of energy change	explanation
<input checked="" type="checkbox"/> A	endothermic	less energy is released making bonds than is absorbed to break bonds
<input type="checkbox"/> B	endothermic	more energy is released making bonds than is absorbed to break bonds
<input type="checkbox"/> C	exothermic	less energy is released making bonds than is absorbed to break bonds
<input type="checkbox"/> D	exothermic	more energy is released making bonds than is absorbed to break bonds