ENGLAND GCSE CHEMISTRY AQA FOUNDATION · UNIT 5 · 25 QUESTIONS

# Energy Changes — 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 so it can be fixed.

**1** **A chocolate cake rises in the oven. What makes it rise?**

- A a gas is made
- B the flour melts
- C the sugar freezes
- D the egg evaporates

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**2** **An ice cream cone melts in the Sun. What is happening to the particles in the ice cream?**

- A they stop moving
- B they lose energy and slow down a lot
- C they get smaller
- D they gain energy and move more

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3 **A cheese pizza contains cheese made from milk. What is milk rich in?**

- A iron
- B calcium
- C fibre
- D vitamin C

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4 **A thermometer shows a patient's temperature is 39 degrees Celsius. Is this above or below normal body temperature?**

- A below normal
- B impossible to tell
- C above normal
- D exactly normal

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5 **A sandwich provides energy. Which process releases energy from food in cells?**

A respiration

B fermentation

C photosynthesis

D digestion

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6 **A cup of coffee is left for an hour. What happens to its temperature?**

A it stays the same all day

B it falls to zero degrees

C it falls to room temperature

D it rises above room temperature

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7 **What does the peak of a reaction profile show?**

- A the overall energy change
- B the energy of the products
- C the activation energy
- D the energy given out

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8 **What is the overall equation for a hydrogen fuel cell?**

- A hydrogen plus nitrogen makes ammonia
- B hydrogen plus oxygen makes water
- C oxygen plus water makes hydrogen
- D hydrogen plus oxygen makes carbon dioxide

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9 **In the combustion of methane, the energy needed to break the bonds is 1000 kJ and the energy released when new bonds form is 1400 kJ. What is the overall energy change?**

- A 400 kJ
- B -1000 kJ
- C -400 kJ
- D 1400 kJ

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10 **What decides the voltage of a chemical cell?**

- A the colour of the metals
- B the temperature of the room
- C the size of the cell
- D the metals used

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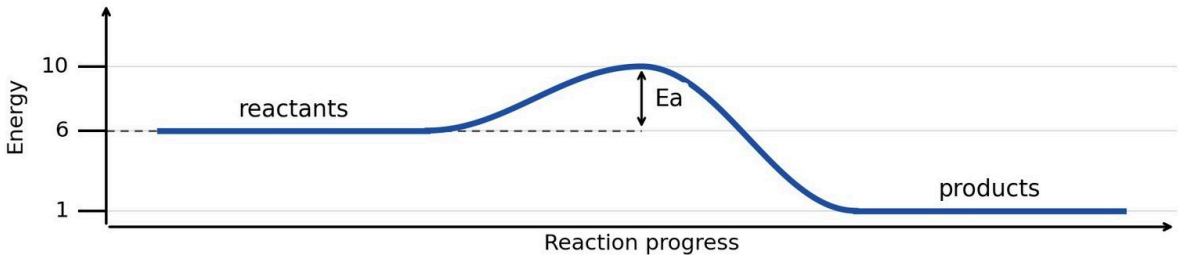
**11** **The diagram shows the energy profile for a reaction. The reactants are at energy 6 and the products are at 1. Is the reaction exothermic or endothermic?**




A exothermic, energy is taken in

B endothermic, energy is given out

C exothermic, energy is given out

D endothermic, energy is taken in

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12 **Which of these is endothermic?**

A photosynthesis

B respiration

C neutralisation

D burning a fuel

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13 **A student heats 100 g of water. Its temperature rises by 20 degrees Celsius. The specific heat capacity of water is 4.2 joules per gram per degree Celsius. How much energy is transferred to the water in kilojoules?**

A 0.84 kJ

B 84 kJ

C 8.4 kJ

D 16.8 kJ

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14 **Why does a hand warmer feel hot?**

A energy is stored in the chemicals

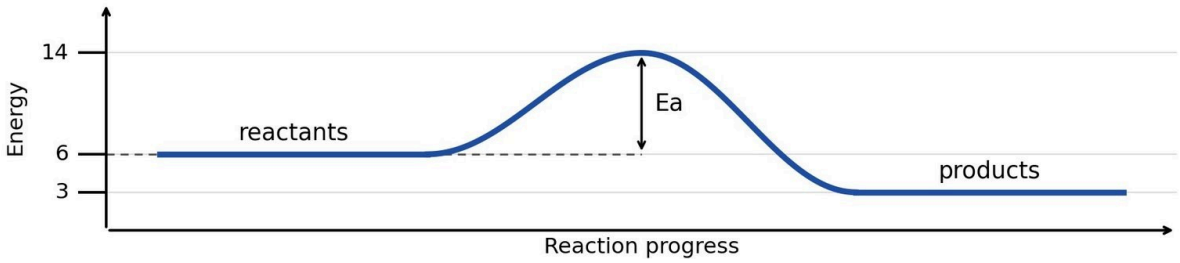
B energy is taken in from the surroundings

C energy is destroyed by the reaction

D it transfers energy out

Understand It with Pulse | Flag a mistake

15 **The diagram shows the energy profile for a reaction. The reactants are at energy 6, the peak is at 14 and the products are at 3. What is the activation energy?**




A 20

B 11

C 3

D 8

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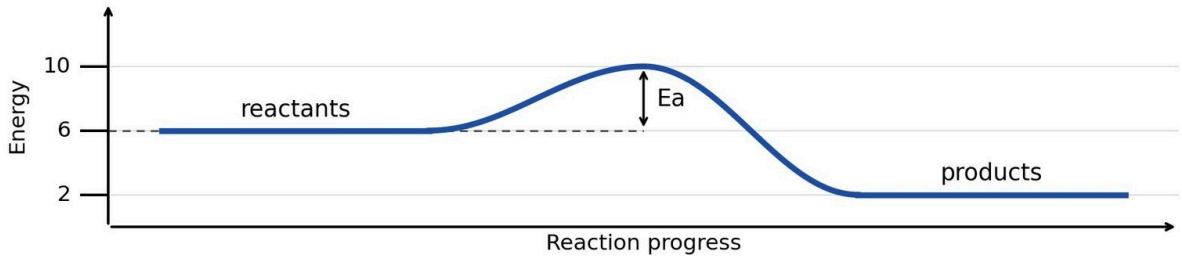
16 **The diagram shows the energy profile for a reaction. The reactants are at energy 6 and the products are at 2. Is the reaction exothermic or endothermic?**




A endothermic, energy is taken in

B endothermic, energy is given out

C exothermic, energy is taken in

D exothermic, energy is given out

Understand It with Pulse | Flag a mistake

17 **What is an endothermic reaction?**

A a reaction that makes light

B a reaction that gives out heat

C a reaction that stops

D a reaction that takes in heat

Understand It with Pulse | Flag a mistake

18 **A student heats 100 g of water. Its temperature rises by 10 degrees Celsius. The specific heat capacity of water is 4.2 joules per gram per degree Celsius. How much energy is transferred to the water in kilojoules?**

A 8.4 kJ

B 42 kJ

C 4.2 kJ

D 0.42 kJ

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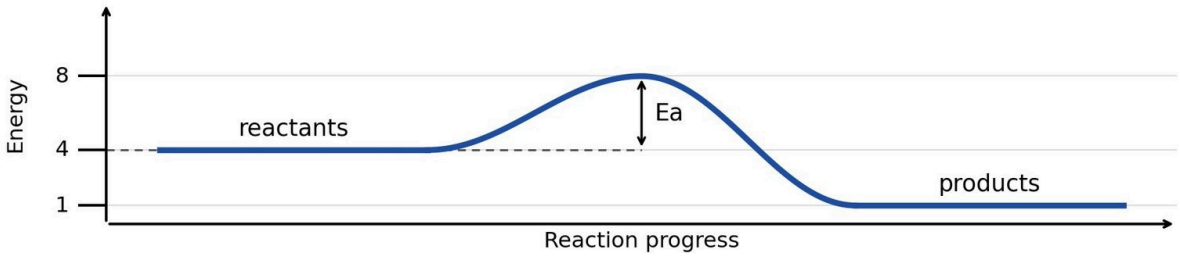
19 **The diagram shows the energy profile for a reaction. The reactants are at energy 4, the peak is at 8 and the products are at 1. What is the activation energy?**




A 7

B 3

C 4

D 12

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20 **In the combustion of methane, the energy needed to break the bonds is 1000 kJ and the energy released when new bonds form is 1200 kJ. What is the overall energy change?**

A 200 kJ

B -200 kJ

C 1200 kJ

D -1000 kJ

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21 **Why are hydrogen fuel cells not yet used in most cars?**

A hydrogen fuel cells are too heavy

B fuel cells make too much electricity

C hydrogen is hard to store safely

D few places sell hydrogen fuel

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22 **A student heats 200 g of water. Its temperature rises by 5 degrees Celsius. The specific heat capacity of water is 4.2 joules per gram per degree Celsius. How much energy is transferred to the water in kilojoules?**

A 0.42 kJ

B 8.4 kJ

C 4.2 kJ

D 42 kJ

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23 **What type of reaction is in a hand warmer?**

A electrolysis

B neutralisation

C exothermic

D endothermic

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24

**On a reaction profile, what is the difference between the reactants and the products?**

A the rate of the reaction over time

B the activation energy

C the overall energy change

D the temperature change

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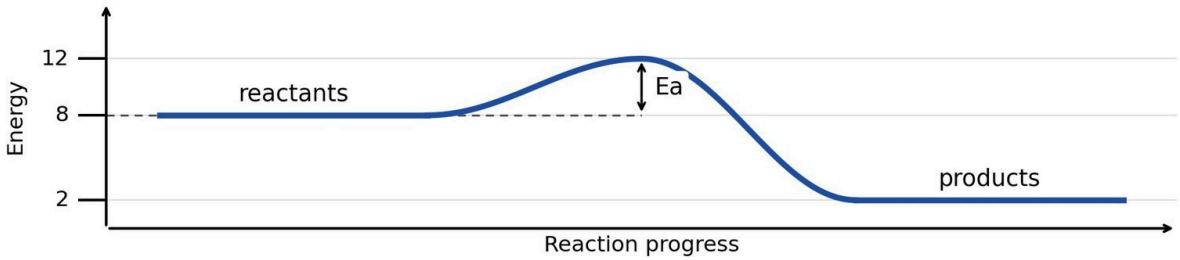
25

**The diagram shows the energy profile for a reaction. The reactants are at energy 8, the peak is at 12 and the products are at 2. What is the activation energy?**




A 6

B 20

C 10

D 4

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# ANSWER KEY

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

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