ENGLAND GCSE CHEMISTRY AQA HIGHER · 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 cheese pizza contains cheese made from milk. What is milk rich in?**

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

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2 **A cup of coffee is hot. How is energy transferred to the air?**

- A by evaporation only, from the top
- B by radiation only, from the surface
- C by conduction and convection
- D by condensation on the cold cup

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3 **A thermometer is placed in hot water. What happens to the liquid inside the thermometer?**

A it evaporates

B it expands

C it freezes

D it contracts

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4 **A sandwich is eaten. Which enzyme digests the starch in the bread?**

A lipase

B protease

C amylase

D pepsin

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

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

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

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

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7 **In an exothermic reaction, are the products higher or lower in energy than the reactants?**

- A higher
- B the same
- C higher then lower
- D lower

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8 **What happens to the temperature during an exothermic reaction?**

- A it stays the same
- B it rises
- C it falls
- D it falls then rises

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9

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 0.42 kJ

B 42 kJ

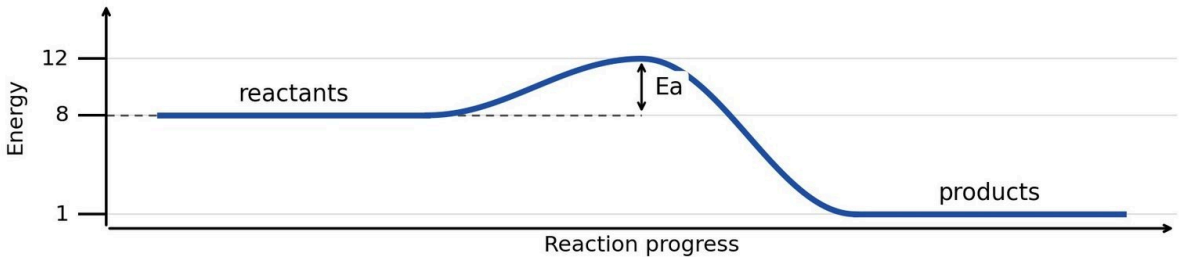
C 4.2 kJ

D 8.4 kJ

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10 **The diagram shows the energy profile for a reaction. The reactants are at energy 8 and the products are at 1. Is the reaction exothermic or endothermic?**



A endothermic, energy is taken in

B exothermic, energy is given out

C endothermic, energy is given out

D exothermic, energy is taken in

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11 **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 1200 kJ
- B 200 kJ
- C -1000 kJ
- D -200 kJ

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

- A energy is stored in the chemicals
- B energy is destroyed by the reaction
- C energy is taken in from the surroundings
- D it transfers energy out

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13 **In a reaction, the energy needed to break bonds is 800 kJ and the energy released making bonds is 1000 kJ. What is the overall energy change?**

A 200 kJ

B -200 kJ

C -800 kJ

D 1000 kJ

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14 **What are the reactants in a hydrogen fuel cell?**

A hydrogen and nitrogen

B hydrogen and oxygen

C oxygen and nitrogen

D hydrogen and carbon dioxide

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

A the metals used

B the colour of the metals

C the temperature of the room

D the size of the cell

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16 **In a reaction, the energy needed to break bonds is 1000 kJ and the energy released making bonds is 600 kJ. Is the reaction exothermic or endothermic?**

A exothermic, more energy is given out

B endothermic, more energy is given out

C endothermic, more energy is taken in

D exothermic, more energy is taken in

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

A the activation energy

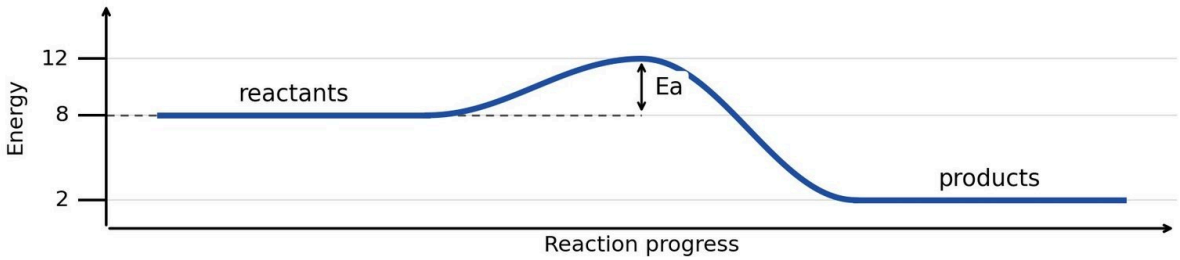
B the energy of the products

C the energy given out

D the overall energy change

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18 **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 4

C 20

D 10

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19 **A student heats 100 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 2.1 kJ
- B 21 kJ
- C 0.21 kJ
- D 4.2 kJ

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20 **In the combustion of methane, the energy needed to break the bonds is 800 kJ and the energy released when new bonds form is 1200 kJ. What is the overall energy change?**

- A -800 kJ
- B -400 kJ
- C 1200 kJ
- D 400 kJ

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21 **What is the temperature change in an exothermic reaction?**

- A it rises
- B it becomes zero
- C it stays the same
- D it falls

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22 **In a reaction, the energy needed to break bonds is 1200 kJ and the energy released making bonds is 1400 kJ. What is the overall energy change?**

- A 1400 kJ
- B 200 kJ
- C -200 kJ
- D -1200 kJ

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

- A hydrogen is hard to store safely
- B hydrogen fuel cells are too heavy
- C fuel cells make too much electricity
- D few places sell hydrogen fuel

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24 **In a reaction, the energy needed to break bonds is 1500 kJ and the energy released making bonds is 1100 kJ. Is the reaction exothermic or endothermic?**

- A exothermic, more energy is given out
- B endothermic, more energy is taken in
- C endothermic, more energy is given out
- D exothermic, more energy is taken in

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25

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

A the overall energy change

B the rate of the reaction over time

C the temperature change

D the activation energy

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ANSWER KEY

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

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