

AQA, OCR, Edexcel

GCSE Science

GCSE Chemistry

**Energy Changes
Questions**

M M E

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Total Marks: /32

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Energy transfer during exothermic and endothermic reactions

Q1: Throughout the course of a chemical reaction, explain what happens to the *energy*.

(1 mark)

Q2: During a chemical reaction, if the energy is transferred to the surroundings, how much energy will the products have and why?

(2 marks)

Q3: What is an exothermic reaction?

(2 marks)

Q4: Give two examples of an exothermic reaction.

1. _____
2. _____

(2 marks)

Q5: Give an example of an everyday use of an exothermic reaction.

(1 mark)

Q6: What is an endothermic reaction?

(2 marks)

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Q7: Give two examples of endothermic reactions.

1. _____
2. _____

(2 marks)

Q8: Give an example of an everyday use of an endothermic reaction.

(1 mark)

Reaction Profiles

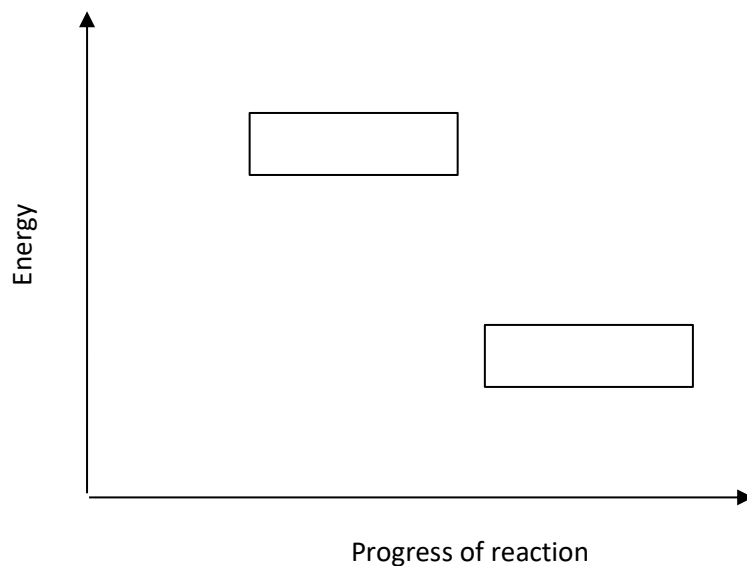
Q9: Using concepts from the collision theory, explain what is needed for a chemical reaction to occur between particles.

(3 marks)

Q10: Define activation energy.

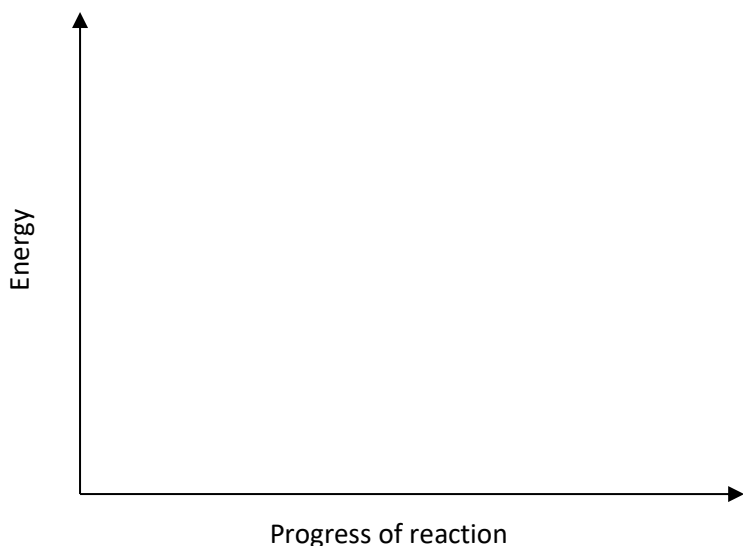
(2 marks)

Q11: Complete a diagram to display an exothermic reaction. Draw an arrow to show the energy change and label on the products and reactants.



(2 marks)

Q12: Complete an energy level diagram for an endothermic reaction. Label on the activation energy and energy absorbed.



(3 marks)

The energy change of reactions

Q13: Complete the following sentences.

Energy must be _____ to _____ bonds in the _____.

Energy is _____ when bonds in the _____ are formed.

- | | | | | |
|----------|-------|-----------|----------|----------|
| Supplied | Break | Reactants | Released | Products |
|----------|-------|-----------|----------|----------|

(5 marks)

Q14: How is the overall energy change of a reaction calculated?

(2 marks)

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Q15: Match the boxes.

The energy released from forming new bonds is greater than the energy needed to break existing bonds.

The energy needed to break existing bonds is greater than the energy released from forming new bonds.

Endothermic

Exothermic

(2 marks)