

IGCSE Chemistry

Name: _____ Score: _____

1. A physical change:
 - ☐ makes no new substance and is usually reversible
 - ☐ always makes a new substance
 - ☐ cannot be reversed
 - ☐ always gives off a gas
2. For a reaction to happen, particles must:
 - ☐ collide with enough energy
 - ☐ be the same size
 - ☐ be at low temperature
 - ☐ be far apart
3. A catalyst speeds up a reaction by:
 - ☐ lowering the activation energy
 - ☐ raising the activation energy
 - ☐ being used up
 - ☐ cooling the reaction
4. A reversible reaction is shown by the symbol:
 - ☐ $\rightleftharpoons$
 - ☐ $\rightarrow$
 - ☐ $=$
 - ☐ $+$
5. The Haber process makes:
 - ☐ ammonia from nitrogen and hydrogen
 - ☐ sulfuric acid
 - ☐ oxygen
 - ☐ sodium chloride
6. Which increase the rate of reaction? (Select all that apply.)
 - ☐ higher temperature
 - ☐ higher concentration

☐ larger surface area (smaller pieces)

☐ lower temperature

Tick every correct option.

7. Which can be signs of a chemical change? (Select all that apply.)

☐ a colour change

☐ a gas given off

☐ a precipitate forming

☐ a change of shape only

Tick every correct option.

8. Melting is a physical change because the substance stays the same.

☐ True ☐ False

9. On a graph of product against time, a steeper line means a faster reaction.

☐ True ☐ False

10. A steeper gradient on a rate graph means a faster reaction.

☐ True ☐ False

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1. **makes no new substance and is usually reversible**

Physical changes keep the same substance.

2. **collide with enough energy**

Collisions need at least the activation energy.

3. **lowering the activation energy**

A lower E_a means more successful collisions.

4. $\rightleftharpoons$

The $\rightleftharpoons$ sign shows a reversible reaction.

5. **ammonia from nitrogen and hydrogen**

$N_2 + 3H_2 \rightleftharpoons 2NH_3$ in the Haber process.

6. **higher temperature; higher concentration; larger surface area (smaller pieces)**

Lower temperature slows the rate.

7. **a colour change; a gas given off; a precipitate forming**

A shape change alone is physical.

8. **True**

Melted ice is still water — reversible.

9. **True**

Steeper = more product per unit time = faster.

10. **True**

Gradient measures rate.