

IGCSE Chemistry

Name: _____ Score: _____

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

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

- ☐ a colour change
- ☐ a change of shape only
- ☐ a gas given off
- ☐ a precipitate forming

Tick every correct option.

8. Which increase the rate of reaction? (Select all that apply.)

- ☐ lower temperature
- ☐ higher temperature
- ☐ larger surface area (smaller pieces)
- ☐ higher concentration

Tick every correct option.

9. A steeper gradient on a rate graph means a slower reaction.

- ☐ True ☐ False

10. At equilibrium, the reactions have completely stopped.

- ☐ True ☐ False

IGCSE Chemistry

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. **False**

False. Oxidation is the gain of oxygen; reduction is the loss of oxygen.

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

A shape change alone is physical.

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

Lower temperature slows the rate.

9. **False**

False. The gradient measures the rate: a steeper line means more product per unit time, so a faster reaction.

10. **False**

Both reactions continue at the same rate – it is dynamic.