

IGCSE Chemistry

Name: _____ Score: _____

1. An exothermic reaction:

- ☐ releases energy, so the surroundings get hotter
- ☐ absorbs energy, so the surroundings get colder
- ☐ has no energy change
- ☐ destroys energy

2. The activation energy is the:

- ☐ energy released by a reaction
- ☐ energy of the products
- ☐ total energy of the reactants
- ☐ minimum energy needed for a reaction to start

3. Breaking chemical bonds:

- ☐ has no energy change
- ☐ destroys atoms
- ☐ absorbs energy (endothermic)
- ☐ releases energy (exothermic)

4. An endothermic reaction makes the surroundings:

- ☐ hotter
- ☐ unchanged
- ☐ brighter
- ☐ colder

5. A reaction pathway diagram plots energy against:

- ☐ the progress of the reaction
- ☐ temperature
- ☐ concentration
- ☐ time of day

6. Bonds broken need 500 kJ; bonds made release 700 kJ. What is the energy change (kJ)?

7. In an exothermic reaction, the products are at a higher energy than the reactants.

☐ True ☐ False

8. Particles must collide with at least the activation energy to react.

☐ True ☐ False

9. Making chemical bonds takes in energy.

☐ True ☐ False

10. A reaction that absorbs energy and cools its surroundings is _____.

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1. **releases energy, so the surroundings get hotter**

Exothermic reactions release energy.

2. **minimum energy needed for a reaction to start**

E_a is the minimum energy to start reacting.

3. **absorbs energy (endothermic)**

Breaking bonds takes energy in.

4. **colder**

It absorbs energy, cooling the surroundings.

5. **the progress of the reaction**

The x-axis is reaction progress.

6. **-200**

$$500 - 700 = -200 \text{ kJ.}$$

7. **False**

False. In an exothermic reaction the products are at lower energy; the difference is released to the surroundings as heat.

8. **True**

Less energetic collisions do not react.

9. **False**

False. Making bonds releases energy (exothermic); breaking bonds takes in energy (endothermic).

10. **endothermic**

Endothermic reactions take in energy.