Science Fables

The Secret of the Charged Kingdom

Story Quiz

This quiz checks what you learned about ions, cations, and anions.

1. What is an ion?

A. An atom or group of atoms with a net electric charge
B. An atom that has no protons
C. A molecule with no electrons
D. An atom with equal numbers of protons and neutrons

2. What happens when an atom loses an electron?

A. It becomes a negatively charged anion
B. It becomes a positively charged cation
C. It becomes neutral
D. It gains a neutron

3. What happens when an atom gains an electron?

A. It becomes a positively charged cation
B. It loses its charge
C. It becomes a negatively charged anion
D. It gains a proton

4. Which of the following is a polyatomic ion?

A. Na^{+}
B. Cl^{-}
C. SO_4^{2-}
D. Mg^{2+}

5. What is the charge of iron(III), Fe^{3+}?

A. +1
B. +2
C. +3
D. -3

Answer Key

1. A — An atom or group of atoms with a net electric charge

An ion is an atom or group of atoms that carries a net electric charge.

2. B — It becomes a positively charged cation

Losing an electron leaves more protons than electrons, so the atom becomes a positively charged cation.

3. C — It becomes a negatively charged anion

Gaining an electron gives the atom more electrons than protons, so it becomes a negatively charged anion.

4. C — SO_4^{2-}

SO_4^{2-} is a polyatomic ion — a charged group of atoms. Na^+, Cl^-, and Mg^{2+} are monoatomic ions.

5. C — +3

Iron(III) is written Fe^{3+}, so its charge is +3.