

Solutions

Each answer shows the steps, then the **result**.

2.1

- oxidation (electrons) is the **loss of electrons**

2.2

- acidified potassium manganate(VII) goes **purple to colourless**

3.1 B

- zinc **loses electrons** to become Zn^{2+} — it is **oxidised**
- A is the copper ion; C is copper(II); D is false

3.2

(a)

- **magnesium is oxidised** (gains oxygen)
- **copper oxide is reduced** (loses oxygen)

(b)

- the reducing agent is **magnesium**

3.3

- electrons lost by one substance must be **gained by another**
- so oxidation and reduction **always happen together**