

Solutions

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

2.1

- K^+ and Br^-

2.2

- Three (two Na^+ and one SO_4^{2-})

2.3

- No — sugar dissolves as neutral molecules, so there are no free ions to carry charge

3.1 B

- separate hydrated Na^+ and Cl^- ions

3.2

(a)

- $\text{CaCl}_2 \rightarrow \text{Ca}^{2+} + 2 \text{Cl}^-$; 0.20 mol Ca^{2+} and 0.40 mol Cl^-

(b)

- $0.20 + 0.40 = 0.60$ mol ions

3.3

- NaCl separates into mobile ions that carry charge; glucose stays as neutral molecules with no ions, so it cannot conduct