

Question 6 (Answer: **A**)

- Lithium is in Group I, so it has one outer electron to lose.
- Bromine is in Group VII, so it needs one electron to complete its shell.
- The lithium atom donates its electron to the bromine atom, giving Li^+ and Br^- .

Question 7 (Answer: **A**)

- Sodium chloride is ionic, so it is built from ions and not from molecules.
- The Na^+ and Cl^- ions alternate in a regular three-dimensional lattice.
- A sea of delocalised electrons describes a *metal*, not an ionic solid.

Question 5 (Answer: **D**)

- A positive ion has been formed by *losing* electrons.
- So it must have more protons than electrons.
- Neutron number has nothing to do with the charge.

2(a)(i)	B
2(a)(ii)	F
2(a)(iii)	D
2(b)(i)	M1 A M2 high melting point AND/OR high boiling point M3 poor conductor of electricity when solid AND molten
2(b)(ii)	M1 C M2 <u>only</u> conducts electricity when molten

Question 6 (Answer: **A**)

- When an ionic compound crystallises the ions pack into a regular giant lattice.
- The number of electrons in each ion depends on the element, not on whether it is a metal.
- Ionic compounds conduct only when molten or dissolved, because only then can the ions move.

2(a)	M1 (strong) (electrostatic) attraction between ions M2 ions have opposite charges
2(b)	M1 8 dots in third shell of each K M2 6 crosses and 2 dots in third shell of S M3 '+' charge on each K ion on correct answer line and '2-' charge on S ion on correct answer line
2(c)(i)	M1 3 correctly positioned positive ions next to given negative M2 all ions correct
2(c)(ii)	cation(s)
2(d)(i)	electrolysis
2(d)(ii)	$2\text{Br}^- \rightarrow \text{Br}_2 + 2\text{e}^-$ M1 any negative Br species losing electron(s) M2 correct ionic half equation
2(d)(iii)	M1 hydrogen M2 bubbles M3 oxygen M4 water M5 bubbles