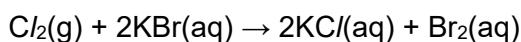


**1(a).** Group 7 elements (halogens) react with halides in solution.

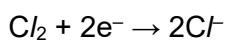
Chlorine reacts with potassium bromide to form potassium chloride and bromine.



Describe what you would **observe** in the reaction.

[1]

**(b).** This is the half equation that shows what happens to chlorine.



- i. Explain why this half equation shows reduction.

[1]

- ii. Write the **balanced half** equation for the reaction of the bromide ions.

[2]

**(c).** Chlorine displaces bromine from potassium bromide because chlorine is more reactive than bromine.

Explain why chlorine is more reactive than bromine.

[2]

**2.** Why are balloons filled with helium gas able to float in the air?

- A** Helium is colourless.
- B** Helium is in Group 0 and is unreactive.
- C** Helium has a low boiling point.
- D** Helium has a low density.

Your answer

[1]

3. Sodium, in Group 1, reacts with fluorine in Group 7.

Sodium fluoride is made.

What is the **balanced symbol** equation for the reaction?

- A  $\text{Na} + \text{F} \rightarrow \text{NaF}$
- B  $2\text{Na} + \text{F}_2 \rightarrow 2\text{NaF}$
- C  $\text{Na} + \text{F}_2 \rightarrow \text{NaF}_2$
- D  $2\text{Na} + \text{F} \rightarrow \text{Na}_2\text{F}$

Your answer

[1]

**END OF QUESTION PAPER**