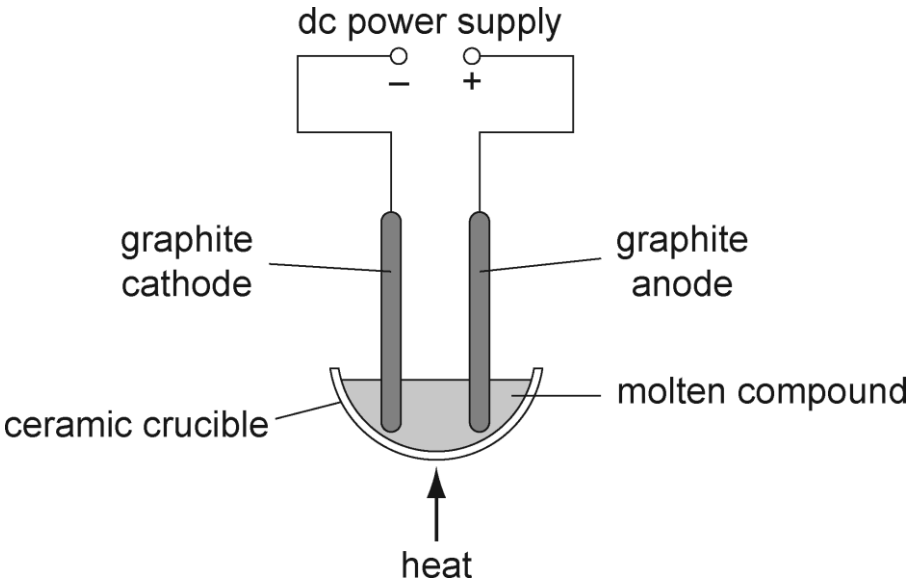
GCSE Chemistry A (Gateway Science)

J248/01 Chemistry A C1-C3 and C7 (Foundation Tier)

Question Set 5

1 **(a)** Look at the diagram.

It shows the apparatus used for the electrolysis of some molten compounds.



The table shows the products at each electrode during the electrolysis of two molten compounds.

Complete the table.

Molten compound	**Formula**	**Product at negative electrode (cathode)**	**Product at positive electrode (anode)**
sodium chloride	NaC*l*	sodium	chlorine
lead bromide	$PbBr_2$	lead	bromine

[2]

(b) Copper sulfate solution can be electrolysed using non-inert copper electrodes.

Describe what happens at the negative copper electrode **and** the positive copper electrode.

Negative electrode: Copper depositing

Positive electrode: anode dissolves forming Cu^{2+} **[2]**

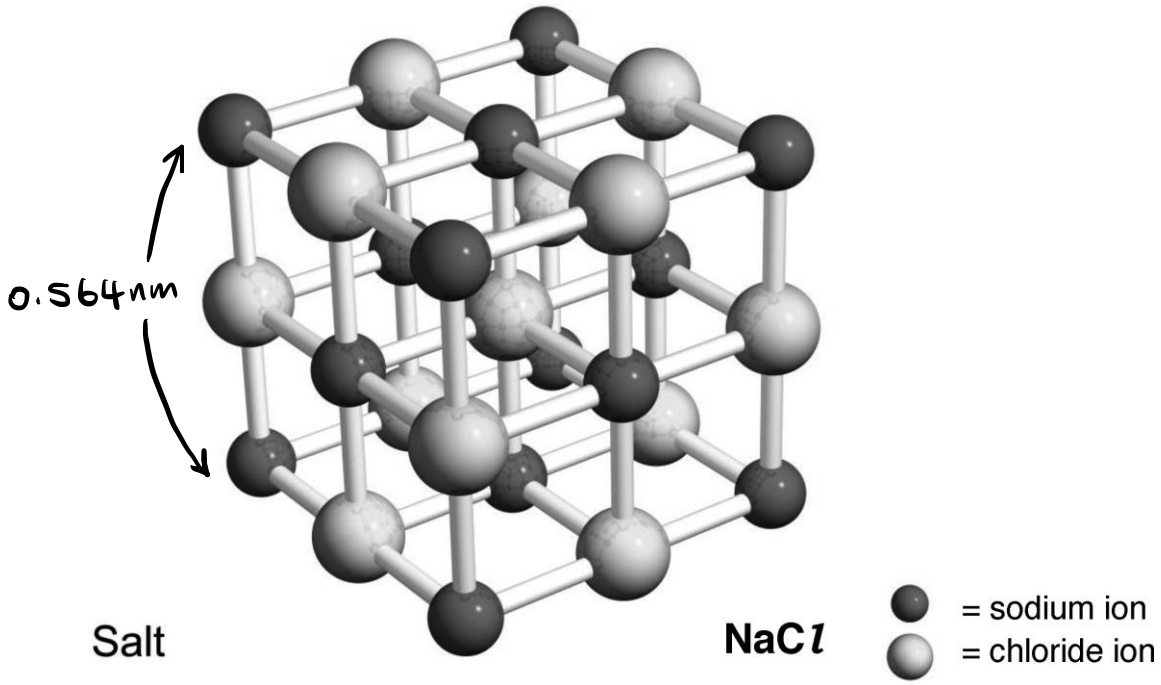
(c) A student is electrolysing a solution of sodium chloride, NaC*l*, in water, H_2O.

Complete the list of ions present in sodium chloride solution.

Positive ions (cations)	Negative ions (anions)
Na^+	Cl^-
H^+	OH^-

[2]

(d) Here is a diagram of a sodium chloride crystal.



- The C*l*–Na–C*l* length in a crystal of sodium chloride is 0.564 nm.

What is the volume of this cube in nm^3?

$0.564^3 = 0.1794...$

Give your answer to **3** significant figures.

Answer = ... nm^3 **[3]**

0.179

Total Marks for Question Set 5: 9