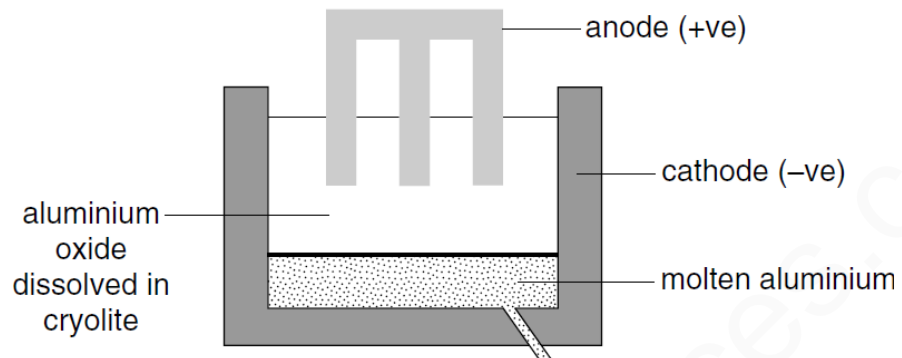


NO:

**ALUMINIUM EXTRACTION-SET-1**

1

The diagram shows how aluminium is manufactured by electrolysis.



What are the anode and cathode made of?

	anode	cathode
<b>A</b>	aluminium	aluminium
<b>B</b>	aluminium	graphite
<b>C</b>	graphite	aluminium
<b>D</b>	graphite	graphite

2

Aluminium is extracted from its oxide by electrolysis.

The oxide is dissolved in .....1..... cryolite and aluminium is deposited at the .....2.....

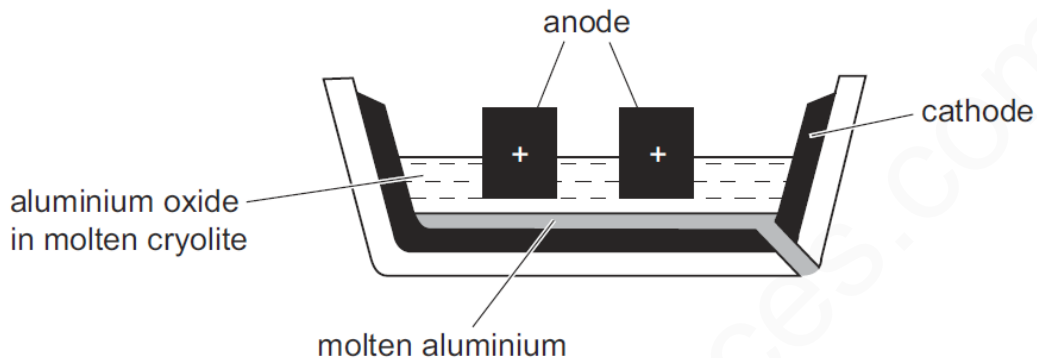
Which words correctly complete gaps 1 and 2?

	1	2
<b>A</b>	aqueous	cathode
<b>B</b>	aqueous	anode
<b>C</b>	molten	cathode
<b>D</b>	molten	anode

3

Aluminium is manufactured by electrolysis of aluminium oxide.

The diagram shows the electrolysis cell.



Which statement about the process is **not** correct?

- A Aluminium ions gain electrons during the electrolysis and are reduced.
- B Cryolite is added to reduce the melting point of the aluminium oxide.
- C The anode and cathode are made of graphite.
- D The cathode has to be replaced regularly because it is burnt away.

4

Why is cryolite used during the extraction of aluminium by electrolysis?

- A It is a catalyst for the reaction.
- B It lowers the melting point of the electrolyte.
- C It protects the anodes.
- D It separates the aluminium from the electrolyte.

5

Aluminium is extracted by electrolysis of a mixture of aluminium oxide and cryolite.

Which statement is **not** correct?

- A** The electrodes are made from graphite.
- B** The formula for aluminium oxide is  $Al_2O_3$ .
- C** The purpose of the cryolite is to lower the melting point of the mixture.
- D** The reaction taking place at the anode is  $Al^{3+} + 3e^- \rightarrow Al$ .

6

Aluminium is extracted from its oxide by electrolysis.

Which words correctly complete the spaces?

The oxide is dissolved in .....1..... cryolite and aluminium is deposited at the .....2.....

	space 1	space 2
<b>A</b>	aqueous	negative cathode
<b>B</b>	aqueous	positive anode
<b>C</b>	molten	negative cathode
<b>D</b>	molten	positive anode

7

Aluminium is extracted from its oxide by electrolysis. To do so, the oxide is dissolved.

Which substance is used to dissolve aluminium oxide and where is aluminium deposited during the electrolysis?

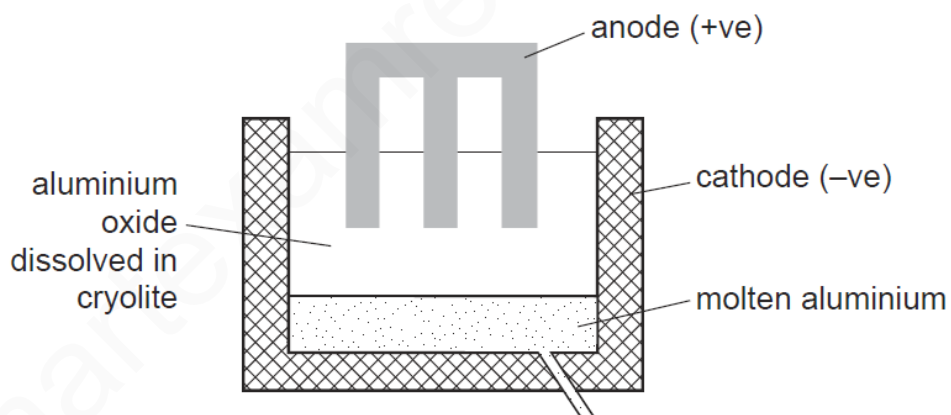
	substance used to dissolve aluminium oxide	where aluminium is deposited
<b>A</b>	cryolite	anode (+ve)
<b>B</b>	cryolite	cathode (-ve)
<b>C</b>	water	anode (+ve)
<b>D</b>	water	cathode (-ve)

Ms-7

B

8

The diagram shows how aluminium is manufactured by electrolysis.



What are the anode and cathode made of?

	anode	cathode
<b>A</b>	aluminium	aluminium
<b>B</b>	aluminium	graphite
<b>C</b>	graphite	aluminium
<b>D</b>	graphite	graphite

9	<p>Aluminium is extracted by electrolysis.</p> <p>From which ore is aluminium extracted and at which electrode is aluminium deposited during electrolysis?</p> <table border="1" data-bbox="280 380 833 638"> <thead> <tr> <th></th> <th>ore</th> <th>electrode</th> </tr> </thead> <tbody> <tr> <td><b>A</b></td> <td>bauxite</td> <td>negative</td> </tr> <tr> <td><b>B</b></td> <td>bauxite</td> <td>positive</td> </tr> <tr> <td><b>C</b></td> <td>cryolite</td> <td>negative</td> </tr> <tr> <td><b>D</b></td> <td>cryolite</td> <td>positive</td> </tr> </tbody> </table>		ore	electrode	<b>A</b>	bauxite	negative	<b>B</b>	bauxite	positive	<b>C</b>	cryolite	negative	<b>D</b>	cryolite	positive
	ore	electrode														
<b>A</b>	bauxite	negative														
<b>B</b>	bauxite	positive														
<b>C</b>	cryolite	negative														
<b>D</b>	cryolite	positive														
10	<p>Which statement about the industrial extraction of aluminium from aluminium oxide is correct?</p> <p><b>A</b> Aluminium is extracted by heating its oxide with carbon.</p> <p><b>B</b> Aluminium is extracted using electrolysis and is collected at the anode.</p> <p><b>C</b> Aluminium is extracted using platinum electrodes and direct current.</p> <p><b>D</b> Molten cryolite is used as a solvent for aluminium oxide.</p>															
11	<p>Cryolite, <math>\text{Na}_3\text{AlF}_6</math>, is added to aluminium oxide in the electrolytic extraction of aluminium.</p> <p>What is the reason for this?</p> <p><b>A</b> to decrease the melting point of the electrolyte</p> <p><b>B</b> to protect the anodes</p> <p><b>C</b> to produce more aluminium</p> <p><b>D</b> to stop the aluminium reacting with air</p>															

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