Electrolysis

Question Paper

Level	GCSE
Subject	Chemistry
Exam Board	Edexcel IGCSE
Module	Double Award (Paper 1C)
Topic	Principles of Chemistry
Sub-Topic	Electrolysis
Booklet	Question Paper

Time Allowed: **12 minutes**

Score: **/10**

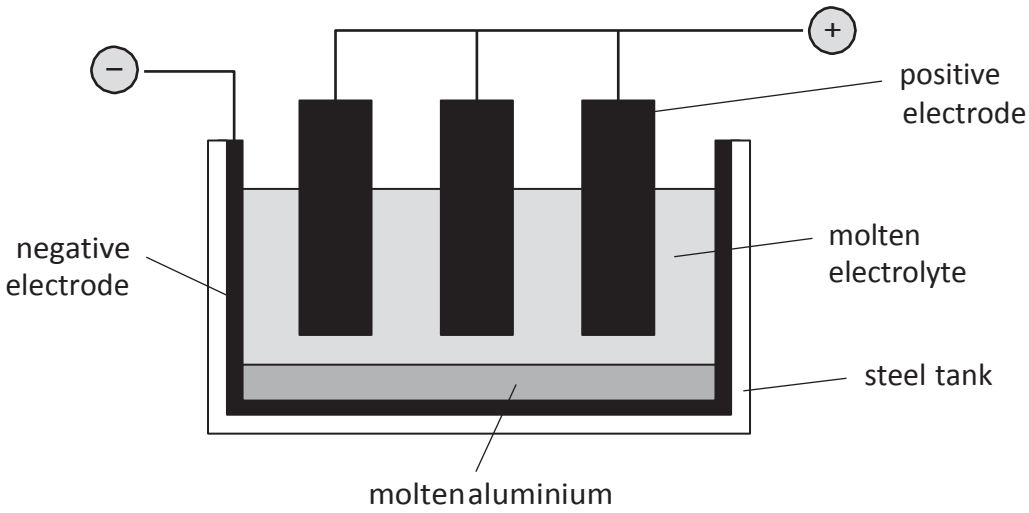
Percentage: **/100**

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	75%	70%	60%	55%	50%	<50%

1 This question is about the extraction and uses of aluminium.

(a) Aluminium is extracted from aluminium oxide by electrolysis.



What are the electrodes made of?

(2)

Negative electrode .....

Positive electrode .....

(b) (i) Explain why the operating temperature would need to be very high if pure aluminium oxide were used as the electrolyte.

(1)

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(ii) Describe how the operating temperature is kept low.

(1)

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(c) The ionic half-equation for the reaction at the negative electrode is

$$Al^{3+} + 3e^- \rightarrow Al$$

What type of reaction is occurring at the negative electrode?

Explain your answer.

(2)

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(d) The waste gases escaping from the electrolysis cell contain carbon dioxide.

Describe how the carbon dioxide is formed.

(2)

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(e) Aluminium is used to make cans for food and drinks.

State two properties of aluminium that make it suitable for this use.

You should not refer to cost in your answers.

(2)

1 .....

2 .....

(Total for Question 1 = 10 marks)