

Electricity and Chemistry – 2019 Nov IGCSE

1. 0620/42/O/N/19/No.4

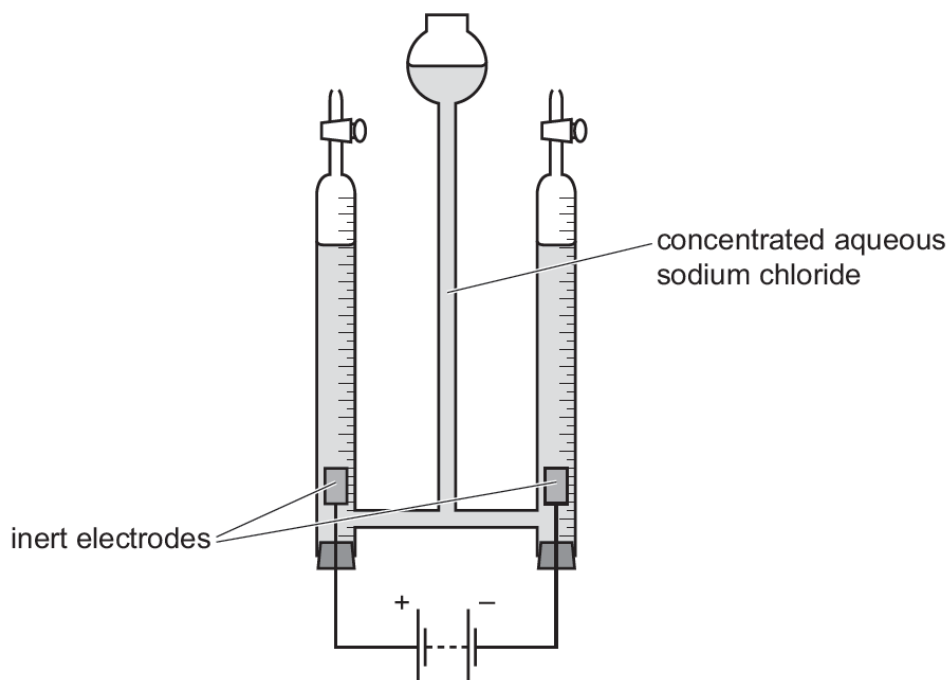
Many substances conduct electricity.

(a) Identify all the particles responsible for the passage of electricity in:

- graphite
- magnesium ribbon
- molten copper(II) bromide.

[4]

(b) A student used the following apparatus to electrolyse concentrated aqueous sodium chloride using inert electrodes.



(i) Suggest the name of a metal which could be used as the inert electrodes.

..... [1]

(ii) Name the gas formed at the positive electrode.

..... [1]

(iii) Write an ionic half-equation for the reaction occurring at the negative electrode. Include state symbols.

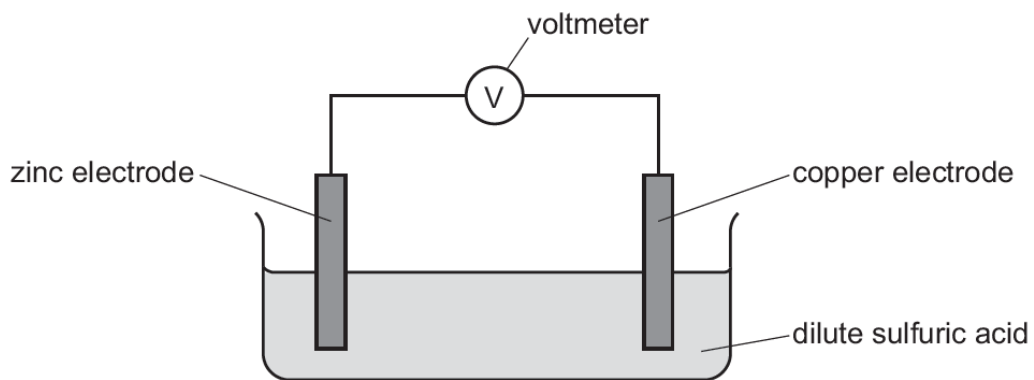
..... [3]

(iv) How, if at all, does the pH of the solution change during the electrolysis? Explain your answer.

.....
.....
..... [3]

(c) A student used the following electrochemical cell.

The reading on the voltmeter was +1.10V.



(i) Draw an arrow on the diagram to show the direction of electron flow. [1]

(ii) Suggest the change, if any, in the voltmeter reading if the zinc electrode was replaced with an iron electrode. Explain your answer.

.....
..... [2]

(iii) The zinc electrode was replaced with a silver electrode. The reading on the voltmeter was -0.46V .

Suggest why the sign of the voltmeter reading became negative.

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..... [1]

[Total: 16]