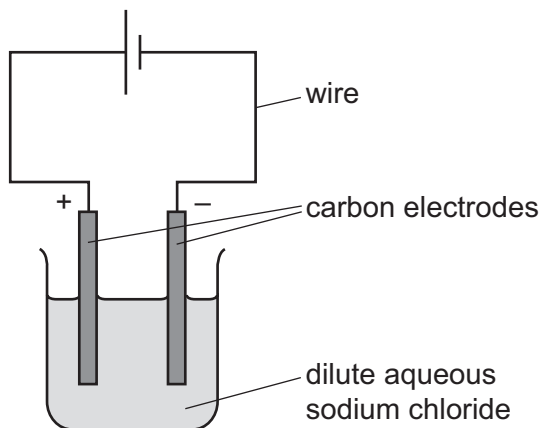


SMART EXAM RESOURCES
SUBJECT: CHEMISTRY
TOPIC: ELECTROCHEMISTRY
SET-2-QP-MS

ELECTROLYSIS OF DILUTE NaCl

1

A student carries out an electrolysis experiment using the apparatus shown.



The student uses dilute aqueous sodium chloride.

(a) State the name given to any solution which undergoes electrolysis.

..... [1]

(b) Hydroxide ions are discharged at the anode.

(i) Complete the ionic half-equation for this reaction.



(ii) Explain how the ionic half-equation shows the hydroxide ions are being oxidised.

..... [1]

(c) Describe what the student observes at the cathode.

..... [1]

(d) Write the ionic half-equation for the reaction at the cathode.

..... [2]

MARK SCHEME:

(a)	electrolyte	1
(b)(i)	$4\text{OH}^- \rightarrow 2\text{H}_2\text{O} + \text{O}_2 + 4\text{e}^-$ balance of charge (1) rest of equation (1)	2
(b)(ii)	(OH ⁻ (aq) ions) lose electrons	1
(c)	fizzing	1
(d)	$2\text{H}^+ + 2\text{e}^- \rightarrow \text{H}_2$ species correct (1) fully correct equation (1)	2