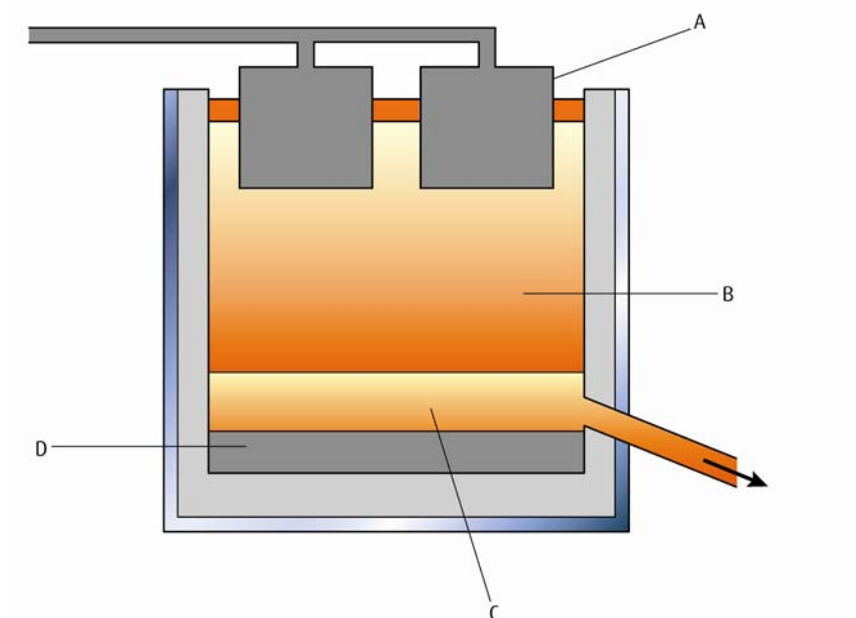


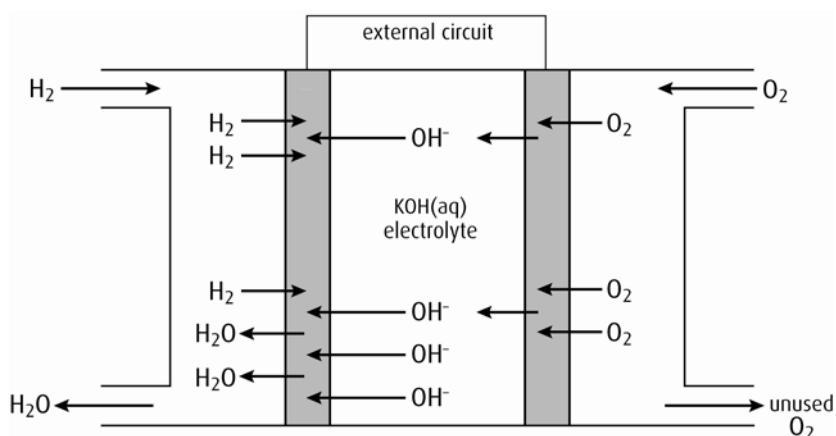
**Core Worksheet – Option C**

- 1** The diagram represents the electrolytic cell used to extract aluminium.



- a** Label the diagram. [4]
- b** State half equations for the reactions that occur at the electrodes. [2]
- c** Explain why the anode must be replaced periodically. [2]
- d** Explain why aluminium alloys are preferred to steel for many uses in the aeronautical industry. [1]
- 2** Isotactic and atactic forms of poly(propene) both exist.
- a** Explain, with the aid of a diagram, the difference between atactic and isotactic poly(propene). [2]
- b** Explain whether atactic or isotactic poly(propene) has the higher melting point. [3]
- 3** With reference to particular reactions, explain the difference in the mode of action of heterogeneous and homogeneous catalysts. [4]

- 4 A diagram of a fuel cell is shown below.



- a Label the anode and cathode and show the direction of electron flow in the external circuit. [3]
- b Write half equations for the reactions at each electrode. [2]
- 5 Describe how the structure of an open single-walled carbon nanotube differs from that of a capped nanotube. [2]