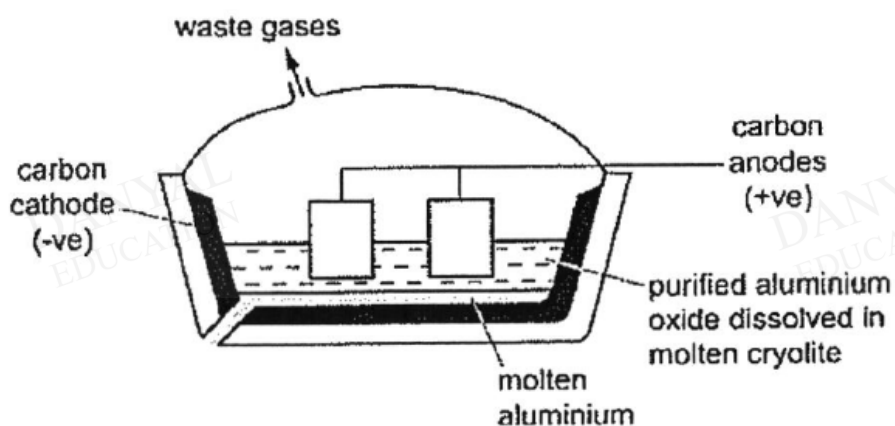


O Level Pure Chemistry MCOs

Electrolysis Test 5.0

Q1

The process of electrolysis can be used to extract aluminium from molten aluminium oxide.

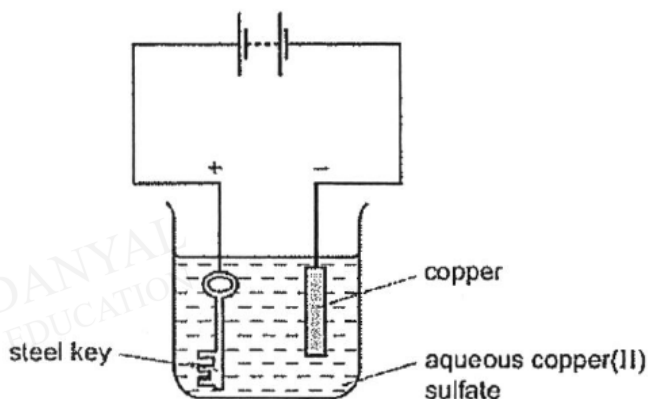


Which statement about this process is correct?

- A Aluminium ions gain electrons to form aluminium.
- B Cryolite is added to increase the melting point of the electrolyte.
- C Cryolite is added to remove acidic impurities as molten slag.
- D The carbon cathodes have to be frequently replaced as it reacts with the oxygen produced.

Q2

A student sets up the following experimental set-up to plate a steel key with copper.



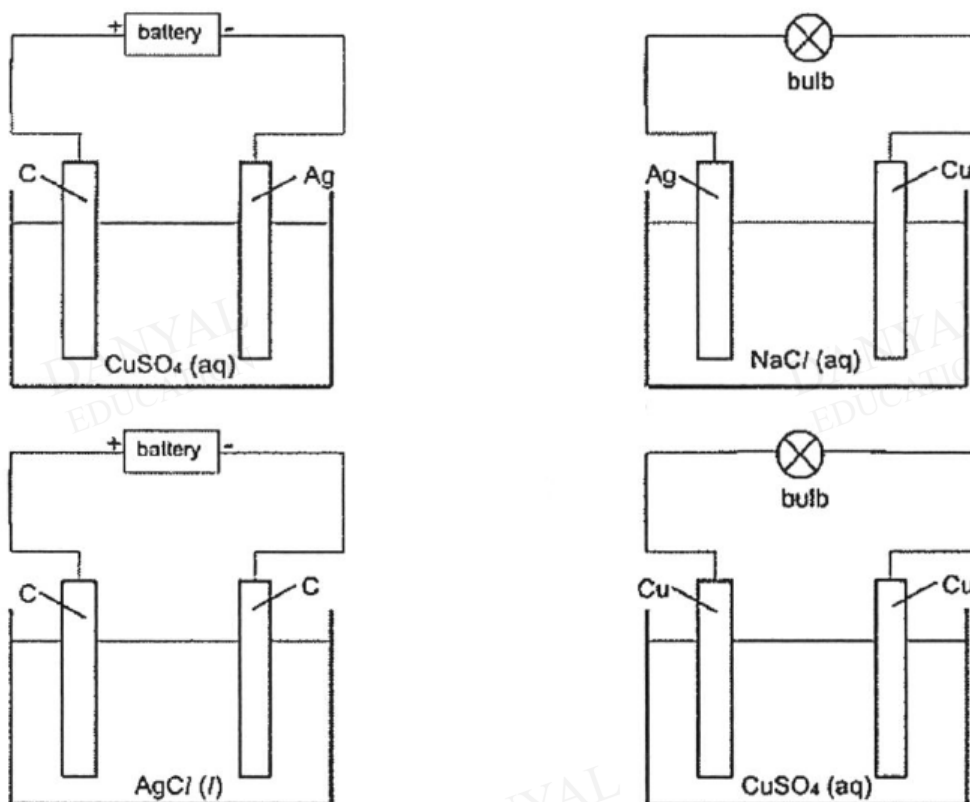
The key was not coated with copper.

Which of the following changes needs to be made to plate the key?

- A increase the concentration of aqueous copper(II) sulfate
- B increase the voltage applied
- C replace the electrolyte with dilute sulfuric acid
- D reverse the electrical connections

Q3

Three circuits are set up as shown below.



In how many of the circuits above does electrolysis take place?

- A 1 B 2 C 3 D 4

Q4

What happens when molten sodium oxide is electrolysed?

- A Sodium ions lose an electron at the cathode.
 B Oxide ions gain electrons at the cathode.
 C Sodium ions gain an electron at the cathode.
 D Oxide ions lose electrons at the cathode.

Q5

In which electrolysis experiment would there be no change in the concentration of the solution?

	electrolyte	electrodes
A	dilute hydrochloric acid	carbon
B	aqueous sodium chloride	carbon
C	aqueous copper (II) nitrate	copper
D	concentrated aqueous iron (II) chloride	copper

Q6

The same current was passed through molten potassium chloride and through molten aluminium oxide. 7.8 g of potassium was obtained in one cell. What was the mass of aluminium obtained in the other cell?

- A 0.9 g
- B 1.8 g
- C 3.6 g
- D 32.4 g

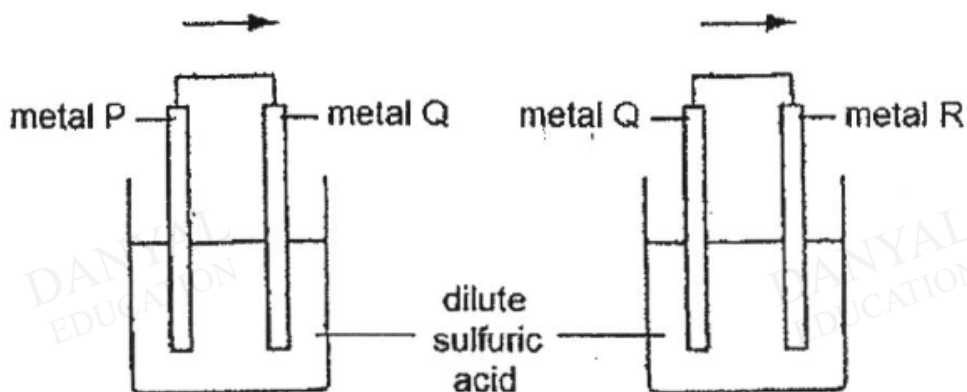
Q7

Rubidium, Rb, is in the same group of the Periodic Table as sodium. Which products are obtained from the electrolysis of concentrated aqueous rubidium chloride?

	cathode product	anode product
A	hydrogen	chlorine
B	hydrogen	oxygen
C	rubidium	chlorine
D	rubidium	oxygen

Q8

Two cells were setup as shown in the diagram. The arrows show the direction of electron flow in the external circuit.

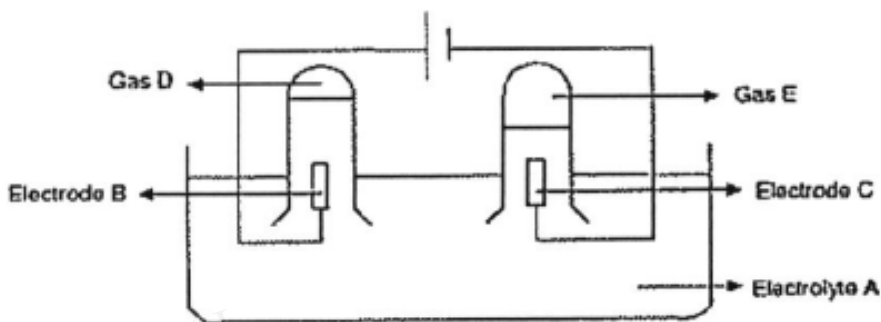


Which set of metals would give the direction of electron flow as shown above?

	metal P	metal Q	metal R
A	Ag	Cu	Zn
B	Cu	Zn	Ag
C	Zn	Ag	Cu
D	Zn	Cu	Ag

Q9

The diagram below show the electrolysis of electrolyte A.

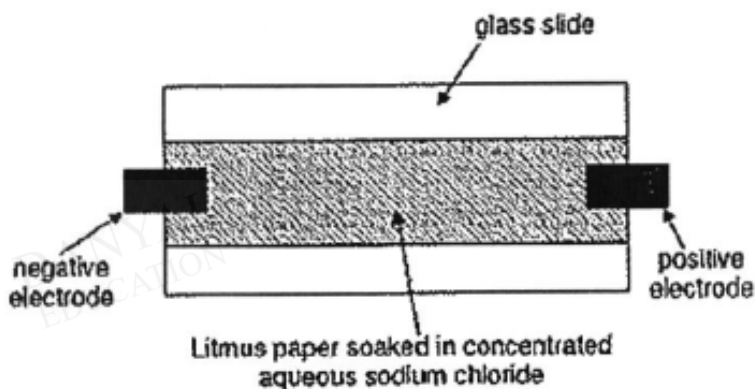


The ratio of the volume of gas D to that of gas E is 1:2.
 Which of the following correctly identifies electrolyte A, electrodes B and C?

	Electrolyte A	Electrode B	Electrode C
A	molten zinc chloride	platinum	platinum
B	aqueous silver nitrate	graphite	graphite
C	aqueous silver nitrate	silver	silver
D	aqueous sodium sulfate	graphite	graphite

Q10

A piece of litmus paper was soaked in concentrated aqueous sodium chloride and supported on a glass slide. The paper was connected to an electrical supply as shown in the diagram.



Which of the following shows the correct observations near each electrode after some time?

	Negative electrode	Positive electrode
A	blue	bleached
B	blue	no change
C	red	bleached
D	no change	red

Answers

Electrolysis Test 5.0

Q1 A

Q2 D

Q3 C

Q4 C

Q5 C

Q6 B

Q7 A

Q8 D

Q9 D

Q10 A

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