

O Level Pure Chemistry MCQs

Electrolysis Test 4.0

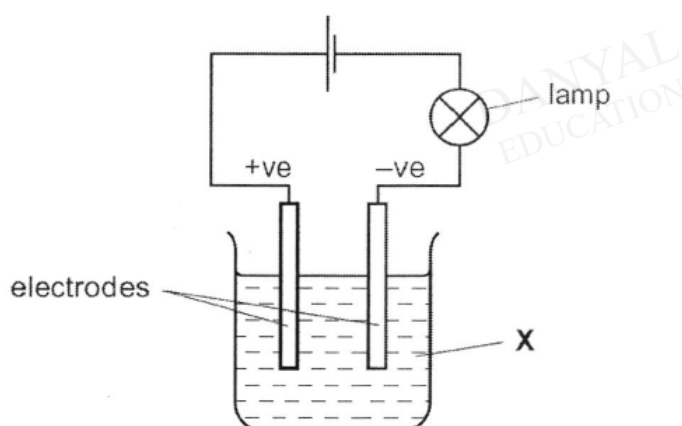
Q1

The following quantities of ions were discharged during electrolysis. Which of the following options required the passage of the largest quantity of electricity?

- A 1 mole of Cu^{2+} ions
- B 2 moles of Al^{3+} ions
- C 2 moles of Br^- ions
- D 4 moles of OH^- ions

Q2

In the following experimental set up, the lamp lights up, but there are no decomposition products at the electrodes.

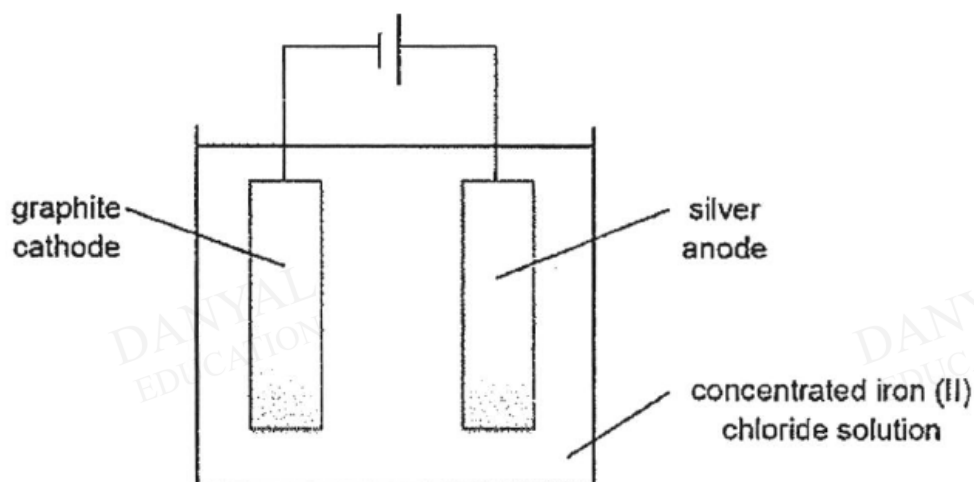


What is X?

- A aqueous sodium chloride
- B bromine
- C molten sodium chloride
- D mercury

Q3

The diagram below shows the electrolysis of concentrated iron (II) chloride solution using a graphite cathode and a silver anode.



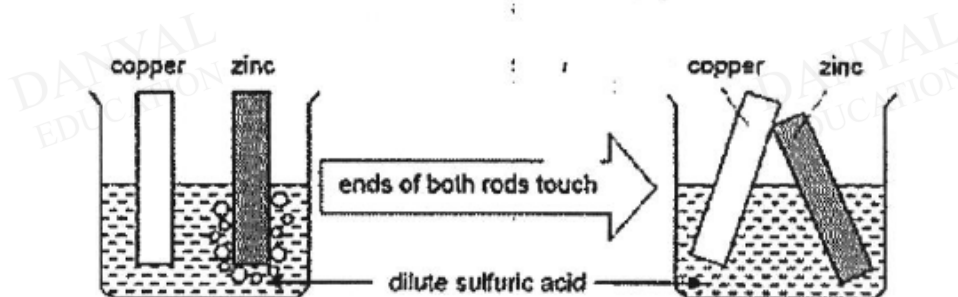
Which of the following statements about the electrolysis setup shown above are correct?

- 1 A white precipitate was formed around the anode.
- 2 Red litmus paper is bleached when it was dipped into the electrolyte beside the anode after some time.
- 3 A gas was formed at both electrodes.
- 4 A dirty green precipitate may be formed after some time.

- A 1 and 2 only
B 1 and 4 only
C 2 and 3 only
D 3 and 4 only

Q4

In an experiment, a copper rod and a zinc rod are placed into a beaker of dilute sulfuric acid as shown below. Bubbles of gas are produced around the zinc rod only.

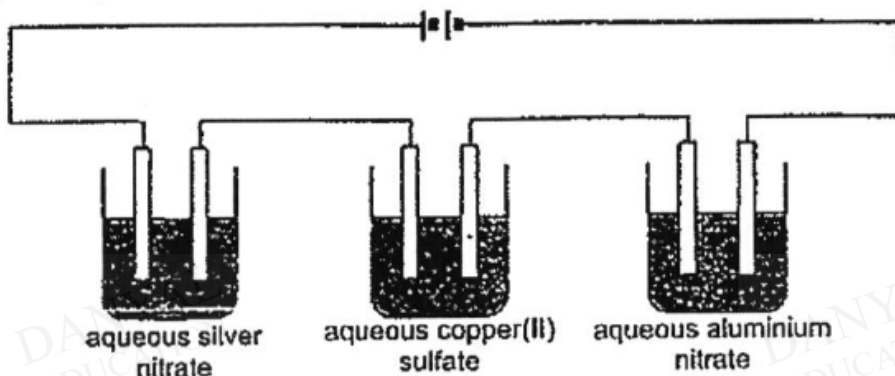


What is observed when the ends of both rods touch each other?

- A Bubbles of gas are collected around zinc rod only.
B Bubbles of gas are collected around copper rod only.
C Bubbles of gas are collected around both rods.
D Bubbles of gas are not collected around both rods.

Q5

Three electrolysis cells are set up as shown below. In all the cells, only carbon electrodes are used and the electrolytes are aqueous solutions of silver nitrate, copper(II) sulfate and aluminium nitrate respectively.

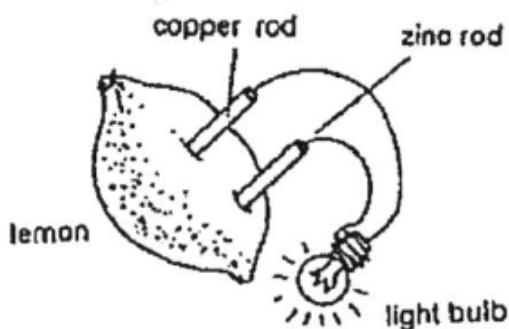


Which of the following correctly gives the masses of metals deposited at the cathode of each cell if 0.5 mole of electrons flows through the circuit?

	mass of Ag / g	mass of Cu / g	mass of Al / g
A	54	32	13.5
B	54	16	0
C	54	64	40.5
D	54	16	4.5

Q6

The diagram below shows a simple cell made with lemon.

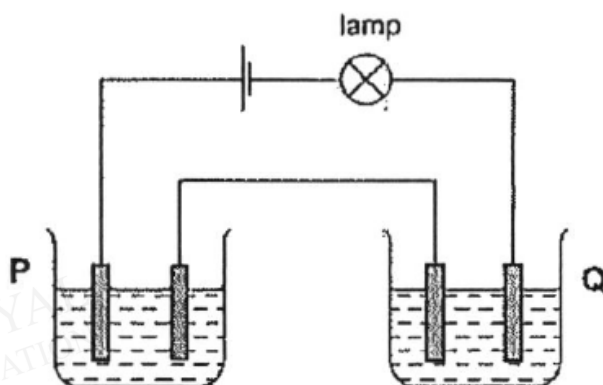


Which of the following statements concerning this lemon cell is not correct?

- A The light bulb will also light up if the lemon is replaced by an orange.
- B Electrons flow from the zinc rod to the copper rod through the external circuit.
- C The light bulb will not light up if the copper rod is replaced by a magnesium rod.
- D The electrolyte in a lemon cell is the organic acid and mineral salts in the lemon.

Q7

Two beakers, P and Q, containing water, were connected in series with a battery, a suitable lamp and inert electrodes, as shown in the diagram.



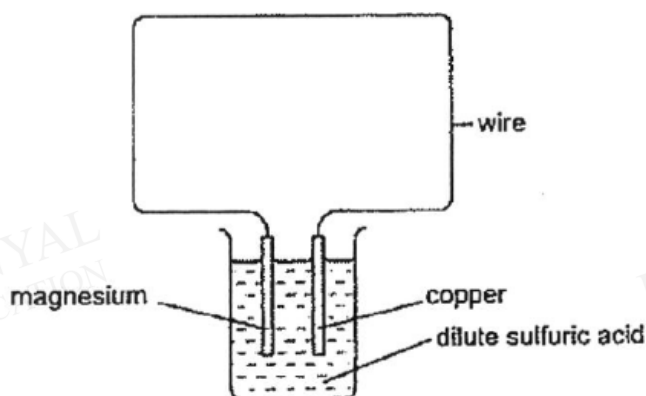
A solid is each added into P and Q.

Which pair of solids will cause the lamp to light up when added?

	in P	in Q
A	copper(II) sulfate	lead
B	calcium	ethanoic acid
C	ethanol	sodium chloride
D	sulfur	potassium nitrate

Q8

The diagram shows a simple cell.



Which of the following statements about the simple cell are correct?

1. After some time, the acidity of the resultant solution remained unchanged.
2. Gas bubbles are formed around copper.
3. Magnesium electrode undergoes oxidation.
4. Mass of copper increases.

A 1 and 2

B 1, 2 and 3

C 2 and 3

D 2, 3 and 4

Q9

In an electrolysis experiment, the same amount of charge deposited 16 g of copper and 6 g of titanium. The charge on the copper ion was 2+.

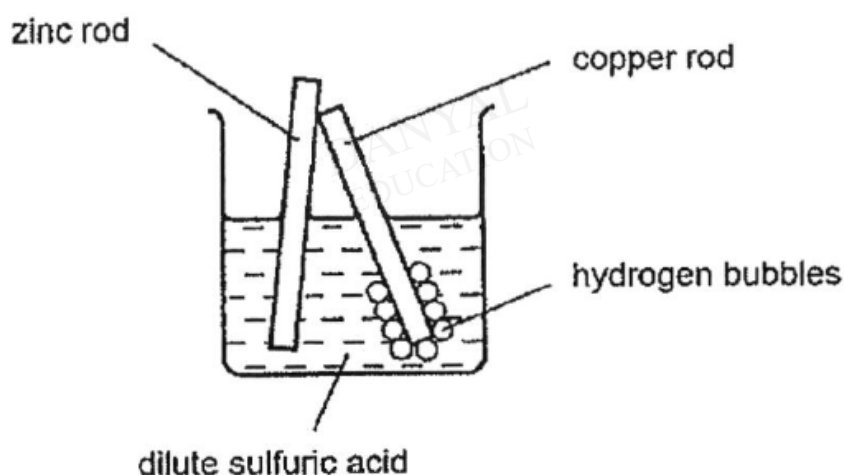
[Ar: Ti, 48; Cu, 64]

What was the charge of the titanium ion?

- A 1+
- B 2+
- C 3+
- D 4+

Q10

In an experiment, rods of copper and zinc are dipped into dilute sulfuric acid, with their top ends touching. Hydrogen bubbles collect around the copper rod.



Which statement about the experiment is correct?

- A Copper reacts with the acid.
- B Electrons flow from zinc to copper.
- C The zinc becomes coated with copper.
- D The zinc is less reactive than copper.

Answers

Electrolysis Test 4.0

- Q1 B
- Q2 D
- Q3 B
- Q4 B
- Q5 D
- Q6 C
- Q7 B
- Q8 C
- Q9 D
- Q10 B

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