

Quiz (Occurrence and Extraction of Metals)

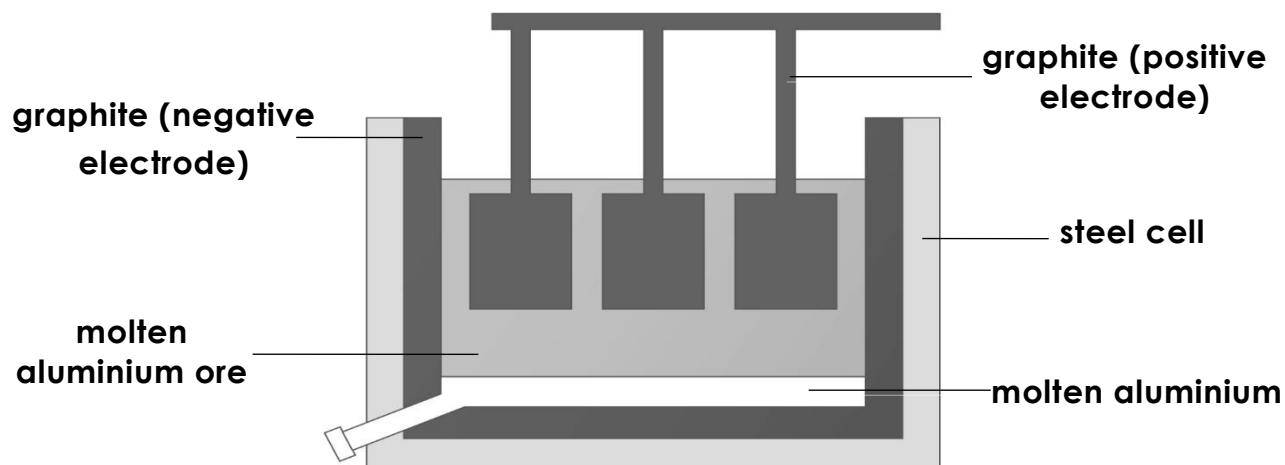
Section A: Multiple-choice

- Which of the following statements about the common uses of metals is INCORRECT?
 - Copper is used to make electric wires.
 - Iron is used to make window frames.
 - Aluminium is used to make aircraft bodies.
 - Silver is used to make electronic components.
- Common metal ores are found in nature in the form of
 - oxides.
 - sulphides.
 - carbonates.
 - (1) and (2) only
 - (1) and (3) only
 - (2) and (3) only
 - (1), (2) and (3)
- Which of the following compounds decompose on heating?
 - Silver oxide
 - Calcium oxide
 - Calcium carbonate
 - (1) and (2) only
 - (1) and (3) only
 - (2) and (3) only
 - (1), (2) and (3)
- Nickel is more reactive than lead but less reactive than iron. The suitable method to extract nickel is
 - heating its ores strongly in air.
 - heating its ores with coke strongly.
 - the electrolysis its molten ores.
 - adding acids to the ore and then electrolyze the resultant solution.
- Which of the following raw materials is NOT put in the blast furnace when extracting iron from its ore?
 - Haematite
 - Coke
 - Carbon monoxide
 - Air
- Which of the following substances can be used to reduce copper(II) oxide in order to extract copper?
 - Hydrogen
 - Carbon
 - Carbon dioxide
 - (1) and (2) only
 - (1) and (3) only
 - (2) and (3) only
 - (1), (2) and (3)
- Which of the following metals is obtained from its ores the earliest in human civilization?
 - Copper
 - Iron
 - Tin
 - Zinc

8. Which of the following does NOT help conserve metals?
- Reusing copper wires
 - Replacing iron forks with stainless steel forks
 - Recycling soft drink cans
 - Replacing copper water pipes with plastic water pipes

Section B: Structured questions

The following diagram shows the extraction of aluminium.



- Unlike iron and copper, which have been used for thousands of years, aluminium has only been extracted and used since 1827. Explain why.
- Explain why aluminium is extracted from the electrolysis of its molten ore, but not heating the ore alone.
- Name the ore of aluminium and give the chemical formula of major compound in the ore. (For reference)
- Explain why the ore must be melted for electrolysis to occur.
 - Name a substance that is used to lower the melting point of the ore. (For reference)

Suggested Answer

Section A

1.	C	5.	C
2.	D	6.	A
3.	B	7.	A
4.	B	8.	B

Section B

- (a) Iron and copper are extracted by heating with carbon.
However, aluminium is extracted after electricity has been discovered.
- (b) As aluminium is reactive, aluminium compounds are relatively stable.
- (c) Bauxite
 Al_2O_3
- (d) (i) The ore needs to be molten so that it can conduct electricity.
(ii) Cryolite / sodium aluminium fluoride