

Unit : 4 Production of metals

Minerals and Ores

The chemically reactive metals are found in the combined state while the relatively unreactive metals (platinum, gold etc.) are found in the native state in the earth's crust.

Minerals

The metallic compounds generally seen in the earth's crust are called minerals.

Example

Bauxite , cryolite , clay etc. are some of the minerals of aluminium.

Ore

A mineral from which a metal is economically, easily and quickly extracted, is called the ore of the metal.

Criteria for selecting an ore

* Easily separable

* Abundance

* High metal content

*cheaply separable

Bauxite is the ore of aluminium.($\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$)

Certain metals, ores and their chemical formulae

Metal	Ores	Chemical formula
Aluminium	Bauxite	$\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$
Iron	Haematite, Magnetite	Fe_2O_3 Fe_3O_4
Copper	Copper pyrites Cuprite	CuFeS_2 Cu_2O
Zinc	Zinc blende Calamine	ZnS ZnCO_3

Metallurgy

Metallurgy involves all the processes leading to the separation of a pure metal from its ore.

There are three important stages in metallurgy.

1. Concentration of ores

2. Extraction of metal

3. Refining of metal

Questions

1). Which among the following is not a mineral of Aluminium ?

(bauxite , Calamine, cryolite , clay)

2). Which metal's ore is calamine ?

3). Which is the ore of aluminium ?

4). Which metals have sulphide ores ?

5. What are the criteria for selecting an ore from minerals ?
