

Assignment

Chapter 6: General Principles and Processes of Isolation of Elements

- 1 Write names of two ores each of Al , Fe , Cu , Zn .
- 2 What do you understand by the following terms?
(a) Roasting (b) Flux (c) Calcination (d) Smelting (e) Slag
- 3 What does leaching mean?
(a) Give reactions involved during leaching of bauxite ore.
(b) Write the reaction involved in the extraction of gold after the gold ore has been leached with NaCN.
- 5 Write the reactions occurring in the different zones of blast furnace during extraction of iron from concentrated Haemetite ore.
- 6 Explain Hall Heroult process of reduction of aluminium oxide. What is the role of graphite and cryolite in electrometallurgy of aluminium?
- 7 (a) Why is the froth floatation method selected for the concentration of Sulphide ores? Write reactions taking place in the extractions of zinc from zinc blende.
(b) An ore sample of galena (PbS) is contaminated with zinc blende (ZnS). Name one chemical compound which can be used to concentrate galena selectively by froth floatation method.
- 8 (a) Why is copper matte put in silica lined convertors?
(b) Explain electro refining of copper. Name the common metals present as anode mud in electrorefining of copper.
- 9 Explain thermodynamic and electrochemical principles of metallurgy.
- 10 Account for the following facts :
 - a) The reduction of a metal oxide is easier if the metal formed is in liquid state at the temperature of reduction.
 - b) The reduction of Cr_2O_3 with Al is thermodynamically feasible, yet it does not occur at room temperature.
 - c) Pine oil is used in froth floatation method
- 11 (a) Which solution is used for the leaching of silver metal in the presence of air in the metallurgy of silver?
(b) Out of C and CO, which is a better reducing agent at the lower temperature range in the blast furnace to extract iron from the oxide ore?