

UNIT - 6

GENERAL PRINCIPLES AND PROCESS OF ISOLATION OF ELEMENTS

1 Mark questions

1. During metallurgical process, in the extraction of metal, flux is added. Why?
2. 'Reduction of a metal oxide is easier if the metal formed is in liquid state at the temperature of reduction. Why?
3. Although thermodynamically feasible, in practice, magnesium metal is not used for the reduction of alumina in the metallurgy of aluminium. Why?
4. Can Mg reduce Al_2O_3 and Al reduces MgO? State the conditions required for this reduction process.

2/ 3 Marks Questions

5. At a site, low grade copper ores are available and zinc and iron scraps are also available. Which of the two scraps would be more suitable for reducing the leached copper ore and why?
6. The value of $\Delta_f G^\circ$ for formation of Cr_2O_3 is -540 kJ mol^{-1} and that of Al_2O_3 is -827 kJ mol^{-1} . Is the reduction of Cr_2O_3 possible with Al?
7. Why is zinc not extracted from zinc oxide through reduction using CO?
8. Cinnabar (HgS) and Galena (PbS) on roasting often give their respective metals but Zinc blende (ZnS) does not. Why?
9. The choice of a reducing agent in a particular case depends upon thermodynamic factor. How far do you agree with this statement? Explain?
10. "The extraction of Ag by leaching with NaCN involves both oxidation and reduction". Explain?
11. Out of C and CO which is a better reducing agent at 673 K?