

**III B.Tech II Semester Supplementary Examinations,  
November/December 2005  
NON FERROUS EXTRACTIVE METALLURGY  
(Metallurgy & Material Technology)**

**Time: 3 hours****Max Marks: 80**

**Answer any FIVE Questions  
All Questions carry equal marks**

\*\*\*\*\*

1. (a) Explain the differences between general roasting and flash roasting.  
(b) How is sulphur removed in conventional roasting and matte smelting of copper ore?  
(c) Explain the flash smelting techniques in copper extraction process. [5+6+5]
2. (a) What are the important ores of Zinc?. Mention places where Zinc ore deposits occur in India. List out the main applications of Zinc.  
(b) What are the important steps in the production of zinc from its sulphide ores by pyrometallurgical process? Explain them. [8+8]
3. (a) Explain in detail about production of lead from sulphide ore.  
(b) Explain various processes used in refining of lead bullion with flow sheet. [8+8]
4. (a) Discuss Bayer process employed at HINDALCO for the production of alumina with the help of flow sheet.  
(b) Explain ALCOA process for the production of aluminium. [8+8]
5. (a) Discuss the electrolytic refining of Magnesium and Titanium.  
(b) What are the problems arise during eletrowinning of Magnesium extraction. [8+8]
6. (a) Discuss the principle involved in the extraction of Titanium and elaborate the process employed with the help of flow sheet.  
(b) Briefly explain purification of titanium. [9+7]
7. What are the important ores of Uranium & what are the unit operations for extracting the nuclear metals. Explain them fully.. [16]
8. Give the details of occurrence of ores and location of their industries with production capacities for the following metals in India.
  - (a) Nickel
  - (b) Gold.
  - (c) Tungsten. [5+5+6]

\*\*\*\*\*