

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-V- EXAMINATION – SUMMER 2016****Subject Code: 152102****Date: 21/05/2016****Subject Name: Non - Ferrous Extractive Metallurgy****Time: 02:30 PM to 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain process flow sheet of Cu extraction with all the important parameters involved in the process **07**  
(b) Describe in brief about Bayer process for production of alumina. **07**
- Q.2** (a) Define Ore and Minerals. Give important Minerals/Ores for different non ferrous metals like Al, Cu, Pb, Mg, Zn **07**  
(b) List out production plants for non ferrous metal extraction in India. Mention application of Tin. **07**
- OR**
- (b) Explain Hall-Heroult's process for aluminum extraction. **07**
- Q.3** (a) Define converting. Discuss the different stages of copper converting. **07**  
(b) Discuss the Parkes' process for silver recovery from lead **07**
- OR**
- Q.3** (a) With the help of line diagram, explain the Pidgeon process. **07**  
(b) Draw and explain flow sheet for Nickel production from its sulphide ore. **07**
- Q.4** (a) Mention the ores of tin. Draw and explain the process for tin extraction. **07**  
(b) Describe the refining process to produce refined lead from base bullion. **07**
- OR**
- Q.4** (a) Discuss the Amalgamation process for gold extraction. **07**  
(b) Explain the Worscrafter process for Copper production. Mention the advantages of this process. **07**
- Q.5** (a) Write in detail about pyro metallurgical route for extraction of lead. **07**  
(b) Write a note on Occurrence of gold. Draw flow diagram of recovery of precious metal from anode slime of copper **07**
- OR**
- Q.5** (a) Explain electrolytic extraction and refining of Mg. **07**  
(b) Give the ores of nickel with their chemical formula. Explain the carbonyl process for refining of nickel. **07**

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