Seat No.:	Enrolment No.
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**Subject Name: Non-Ferrous Extractive Metallurgy** 

Subject Code: 152102

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

BE - SEMESTER-V • EXAMINATION - SUMMER • 2014

Date: 13-06-2014

Time: 10.30 am - 01.00 pm **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. (a) List important ores and locations of their major deposits on world level for Aluminum, 07 0.1 Tin, Zinc and Magnesium. (b) Write a note on Occurrence of gold. Discuss the chlorination process for gold 07 extraction. Write ores of copper. Describe process flow sheet of Cu extraction with all the important 07 0.2 (a) parameters involved in the process. (b) Discuss Bayer process for alumina production and give the flow sheet. Why high 07 pressure is used in Bayer process? OR **(b)** Explain the Flash smelting process for Copper production. 07 0.3 What is electrolytic reefing? Explain the three–layer process of electrolytic refining of Aluminum. (b) Discuss about Single step and multistep continuous processes for copper extraction. **07** Differentiate between these. 0.3 (a) Explain the ALCOA process for Aluminum production. 07 **(b)** What is Blister copper? Explain the Electrolytic refining process of Blister copper. 07 (a) Explain the lead extraction process from its ore. Draw the flow sheet with important 07 0.4 parameters involved in the process. (b) With the help of flow sheet explain the tin extraction process from its concentrate. 07 Explain, Why tin is produced by three stages process? OR 0.4 (a) Explain the Imperial Smelting process for production of zinc with necessary sketches. **07 (b)** What is fire refining? Using example of tin explain it, by the help of flow sheet. 07 Explain the pyrometallurgical process of nickel extraction from its sulphide ore. Draw **07** 0.5 the process flow sheet with important parameters. (b) Explain briefly the NML and CECRI processes for production of magnesium in India. **07** OR Give the ores of nickel with their chemical formula. Explain the carbonyl process for **07 Q.5** (a) refining of nickel. (b) With the help of line diagram, explain the Pidgeon process for extraction of magnesium. 07 \*\*\*\*\*