Seat No.:	Enrolment No.

**Subject Name: Extraction of non ferrous metals** 

Subject Code: 2152107

## GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – V (NEW) EXAMINATION – WINTER 2015

Date:08/12/ 2015

		10:30am to 1:00pm Total Marks: 7	0
m	2	ons: 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks.	
Q.1	(a)	List out World and Indian important non-ferrous ores and mineral deposits companies of Aluminium, Copper, Nickel, Lead, Zinc, Tin, Magnesium.	07
	<b>(b)</b>	Draw flow sheet of Bayer process for alumina production and discuss it briefly.	07
Q.2	(a)	Explain process flow sheet of Cu extraction with all the important parameters involved in the process.	07
	<b>(b)</b>	Explain the WORCRA process for Copper production.	07
		OR	
	<b>(b)</b>	Explain Mitsubishi process for Copper production.	07
Q.3	(a)	Name the important ores of tin. With the help of a flow sheet explain briefly refining of tin.	07
	<b>(b)</b>	Write a note on Occurrence of gold. Describe the amalgamation process for gold extraction	07
		OR	
Q.3	(a)	ALCOA Process, TOTH Process, ALCAN Process.	07
	<b>(b)</b>	Explain Hall-Heroults process of Al extraction.	07
Q.4	(a)	Explain the process for Lead extraction and draw the flow sheet with important parameters involved in the process.	07
	<b>(b)</b>	What is anode slime? Explain the process of precious metal recovery from it.	07
		OR	
Q.4	(a)	Explain the pyro metallurgical process of nickel extraction from its sulphide ore. Draw the flow sheet with important parameters involved in the process .	07
	<b>(b)</b>	Discuss with flow sheet hydro metallurgical extraction of zinc.	07
Q.5	(a) (b)	Discuss recovery of gold, silver and platinum from secondary sources in brief. Draw and explain the pyrometallurgical process flow sheet of zinc extraction.	07 07
Q.5	(a)	OR With the help of line diagram, explain the Pigeon process for extraction of magnesium mentioning the thermodynamic aspects.	07
	<b>(b)</b>	Give the ores of Silver ,Gold and platinum with their chemical formula. Enlist the applications of Tin.	07

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