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GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-IV(New) EXAMINATION – SUMMER 2016

Subject Code:2142102 Date:03/		Date:03/06/2016	
Subject Name:Principles of Extractive Metallurgy Time:10:30 AM to 01:00 PM Total Ma		Total Marks: 70	
ļ	insti u	 Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 	
			MARKS
0.1		Short Questions	14
C	1	Define Extractive Metallurgy.	
	2	What is Calcination?	
	3	Define Leaching.	
	4	What is Converting?	
	5	Discuss term Sintering.	
	6	Define Pyro metallurgy?	
	7	What is Halide Metallurgy?	
	8	Define Pelletizing.	
	9	What is Unit Process?	
	10	Write Different Leaching techniques.	
	11	What is bacterial Leaching?	
	12	What is electrometallurgy?	
	13	Define Current Density.	
	14	What is Activation energy?	
Q.2	(a)	Mention the merits and demerits of Hydrometallurgical extrac processes.	ction 03
	(b)	Write in detail about ion exchange process.	04
	(c)	What is Roasting ? Explain fluidized bed roasting process in br	rief. 07
	(c)	Define Smelting. Differentiate between Matte smelting and Researching.	eduction 07
Q.3	(a)	Explain in brief about Solvent Extraction process.	03
	(b)	Explain Pressure leaching in detail.	04
	(c)	Explain the process of fused salt electrolysis with suitable exa	mple. 07
Q.3	(a)	What are advantages and disadvantages of Pyro metallurgical p	processes. 03
-	(b)	Draw a simple flow sheet for extraction of Aluminium from ba	uxite ore. 04
_	(c)	Differentiate between electro-winning and electro-refining.	07
Q.4	(a)	Explain in brief Fire Refining processes.	03
	(D) (c)	Draw now sneet for production of from and Steel. Differentiate between Order and Molecularity	U4 07
	(U)	Differentiate between Order and Wolcediarity.	07

OR

Q.4	(a)	Draw flow sheet for production of Lead.	03
-	(b)	Draw Simplified Flow-sheets for the production of Copper.	04
	(c)	Justify the importance of Ellingham diagram for oxide system in extractive metallurgy.	07
Q.5	(a)	Derive equation for half life period of first order reaction.	03
	(b)	Draw Simplified Flow-sheets for the production of Magnesium.	04
	(c)	Derive Arrhenius Equation	07
		OR	
Q.5	(a)	Explain theory of absolute reaction rate.	03
	(b)	Draw flow diagram for extraction of Zinc from its sulphide ore.	04
	(c)	Discuss collision theory of reaction kinetics.	07
