



INDIAN SCHOOL DARSAIT



DEPARTMENT OF CHEMISTRY

Subject: Chemistry		Topic : Isolation of Elements		Date of Worksheet: 3.9.2019	
Resource Person: SREEKALA M		Date of Submission: _____			
Name of the Student: _____		Class & Division: XII		Roll Number: _____	
1	Name two metals which occur in nature as oxides.			1	
2	Why is zinc not extracted from zinc oxide through reduction using CO?			1	
3	What is hydrometallurgy?			1	
4	Why is it that sulphide ores are concentrated by the 'froth floatation process'?			1	
5	Write the overall reaction taking place in the process used for the electrolysis of Alumina by Hall-Heroult process.			1	
6	Write a non-exothermic reaction taking place in the blast furnace during extraction of iron.			1	
7	Why reduction of a metal oxide is easier if the metal formed is in liquid state at the temperature of reduction?			1	
8	Differentiate between cast iron and pig iron.			2	
9	Account for the following: a) Cryolite is added to alumina during electrolytic reduction. b) Copper can be extracted by hydro metallurgy but not zinc.			2	
10	Giving examples, differentiate between 'roasting' and 'calcination'.			2	
11	The Gibbs energy of formation of Al_2O_3 and Cr_2O_3 are -847 and -540 KJ /mol respectively. Can Al be used to reduce Cr_2O_3 to Cr? Explain.			2	
12	How is copper obtained from low grade ores and scrap?			2	
13	Explain the principle, process involved in hydraulic washing and leaching.			2	

14	Differentiate between “minerals” and “ores”.	2
15	Why is the extraction of copper from pyrites more difficult than that from its oxide ore through reduction?	2
16	a)What is the role of depressant in froth floatation process? b)Out of C and CO which is a better reducing agent for FeO i) In the lower part of blast furnace (Higher temperature) ii) In the upper part of blast furnace (Lower temperature)	2
17	What are coupled reactions? Illustrate with an example.	2
18	Extraction of Au by leaching with NaCN involves both oxidation and reduction. Justify by giving equations for the reactions involved.	2
19	Describe the role of the following: i)NaCN in the extraction of silver ii) Depressants in froth floatation. iii)CO in the purification of nickel iv) Conc. NaOH in leaching of alumina from bauxite.	1 mark each
20	Account for the following: a) Cryolite is added to alumina during electrolytic reduction. b) Copper matte is put in silica lined converter. c) Copper can be extracted by hydro metallurgy but not zinc.	3
21	Explain the terms with suitable examples: a) collectors b) stabilizers c) depressants	3
22	Explain the following refining methods a) distillation b) liquation c) electrolytic refining. d) Mond process e) Van Arkel method	3
23	Explain : a) zone refining b) vapour phase refining c)Chromatographic method	3
24	Explain the reduction of alumina to aluminium with the help of diagram.	3
25	State the principle on which each of the following processes operates: i) Recovery of silver ore has been leached with NaCN. ii) Electrolytic refining of a metal. iii) Vapour phase refining of a metal.	3
26	Describe how the following changes are brought about: i)Bauxite into pure alumina ii)Impure copper into pure copper	3
27	Write down the reactions taking place in different zones in the blast furnace during the extraction of iron.	3

