



# INDIAN SCHOOL DARSAIT



## DEPARTMENT OF CHEMISTRY

Subject: Chemistry		Topic : Isolation of Elements		Date of Worksheet: 20.11.2017	
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 a non-exothermic reaction taking place in the blast furnace during extraction of iron.				1
6	Why reduction of a metal oxide is easier if the metal formed is in liquid state at the temperature of reduction?				1
7	Differentiate between cast iron and pig iron.				2
8	Giving examples, differentiate between 'roasting' and 'calcination'.				2
9	The Gibbs energy of formation of $\text{Al}_2\text{O}_3$ and $\text{Cr}_2\text{O}_3$ are $-847$ and $-540$ KJ /mol respectively. Can Al be used to reduce $\text{Cr}_2\text{O}_3$ to Cr? Explain.				2
10	How is copper obtained from low grade ores and scrap?				2
11	Explain the principle, process involved in hydraulic washing and leaching.				2
12	Differentiate between "minerals" and "ores".				2
13	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

14	What are coupled reactions? Illustrate with an example.	2
15	Extraction of Au by leaching with NaCN involves both oxidation and reduction. Justify by giving equations for the reactions involved.	2
16	Describe the role of of the following: i) NaCN in the extraction of silver ii) CO in the purification of nickel	2
17	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
18	Explain the terms with suitable examples: a) collectors b) stabilizers c) depressants	3
19	Explain the following refining methods a) distillation b) liquation c)electrolytic refining. a) Mond process b) Van Arkel method	3
20	Explain : a) zone refining b)Chromatographic method	3
21	Explain the reduction of alumina to aluminium with the help of diagram.	3
22	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
23	Describe how the following changes are brought about: i)Pig iron into steel ii)Bauxite into pure alumina iii)Impure copper into pure copper	3
24	Write down the reactions taking place in different zones in the blast furnace during the extraction of iron.	3