

GOVERNMENT POLYTECHNIC JAJPUR

A/ P: Ragadi, Block: Korei, Dist.: Jajpur, Odisha- 755019

Website: <https://www.gpjajpur.org> E-mail: principalgpjajpur@yahoo.co.in Contact: 9437155107

DEPARTMENT OF METALLURGICAL ENGINEERING

LESSON PLAN

Discipline Metallurgy	Semester 3RD	Name of teaching faculty: Suwendu Muduli (Lecturer in Metallurgy)
Subject Mineral processing	No day/ week class: 4	SEMESTER FROM 01-08-2023 to 09-12-2023 No of week: 16 Session: Winter 2023
Week	Class Day	Topic
1st	1st	Introduction to mineral dressing
	2nd	Mineral resources of india
	3rd	Unit operation- ore dressing
	4th	Comparision of mineral and ore
2nd	1st	Comminution method
	2nd	Liberation method
	3rd	Physical and chemical property of ore
	4th	Types of crushing methods
3rd	1st	Discuss jaw crusher- Blake type
	2nd	Discuss jaw crusher- Dodge type
	3rd	Discuss gyratory crusher
	4th	Discuss roll crusher
4th	1st	Find angle of nip, Reduction ratio
	2nd	Compare jaw and gyratory crusher
	3rd	Compare blake and dodge crusher
	4th	Different grinding methods
5th	1st	Discuss ball mill operation
	2nd	Rod mill and tube mill
	3rd	Theory of ball mill operation
	4th	Open ckt and close ckt grinding
	1st	Compare dry and wet grinding
	2nd	Derive critical speed of ball mill

6th	2nd	
	3rd	Factors affecting ball mill
	4th	Class test-1 m.c.q type
7th	1st	Lab sizing method
	2nd	Ro-tap sieve shaker
	3rd	Calculate mesh size mesh number
	4th	Discuss grizzly screen
8th	1st	Discuss trommel screen
	2nd	Explain shaking screen
	3rd	Explain vibrating screen
	4th	Revision of old chapter
9th	1st	First I.A test
	2nd	Capacity and efficiency of screens
	3rd	Principles of classifier
	4th	Discuss even classifier
10th	1st	Compare lab sizing and industrial screening
	2nd	Gravity concentration method
	3rd	Discuss flowing film method
	4th	Explain wilfley table
11th	1st	Principle of jigging
	2nd	Factors affecting stratification
	3rd	Discuss baum jig
	4th	Discuss harz jig
12th	1st	Different jigs and working method
	2nd	Revision of old chapter
	3rd	Class test-2 m.c.q type
	4th	Heavy media separation method
13th	1st	Principles of H.M.S
	2nd	Discuss lessing process
	3rd	Discuss du-pont process
	4th	Discuss bertrand process
14th	1st	Explain chance process
	2nd	Principle of froth flotation
	3rd	Compare skin and froth flotation

	4th	Dicuss treagent of flotation
15th	1st	Contruction of flotation cell
	2nd	Examples of reagents and function
	3rd	Principle of electrostatic separator
		Dicuss huffs separator
	4th	Columbs law derivation
16th	1st	Magnetic separator operation
	2nd	Principle of ball-norton separator
	3rd	Revision of old chapter
	4th	Second I.A test