

DISCIPLINE- METALLURGY

Name of the teacher- Sadashiba Patra

Semester-5th (01/08/2023 to 30/11/2023)

Session-2023-24

Subject-Theory-5(Non-Ferrous Metallurgy)

Wk no	Day	Subject to be convert	Remark
Wk-1 01/08/23 to 05/08/2023	Day-1	Introduction to Non-Ferrous metals.	
	Day-2	Non-Ferrous ore reserves of India & Non-Ferrous Industries in India.	
	Day-3	Non-Ferrous ore reserves of India & Non-Ferrous Industries in India.	
Wk-2 07/08/2023 to 12/12/2023	Day-1	Minerals of Aluminum, Properties & uses of Aluminum Review of Aluminum deposits & Aluminum industries in India.	
	Day-2	Bayer's process of alumina production.	
	Day-3	Bayer's process of alumina production.	
	Day-4	Hall-Heroult process of aluminium production.	
Wk-3	Day-1	Factors affecting electro lysis in Hall- Heroult process & Anode effect.	
	Day-2	Various methods of refining Aluminium (Toth process & three layer process.	
	Day-3	Newer processes/ other processes of Al-production review of Al-extraction.	
Wk-4 21/08/23 to 26/08/23	Day-1	Class test on Aluminium production.	
	Day-2	Minerals, Properties & uses of tin Riview of deposit & industries of tin in India.	
	Day-3	Cocentration of tin ore.	
	Day-4	Smelling of tin cone for extraction.	
Wk-5 28/8/23 to 02/09/23	Day-1	Refining of tin.	
	Day-2	Review of metals extracted from oxide ore (Aluminium & Tin)	
	Day-3	Class test on extraction of Al & Sn.	
Wk-6 04/09/23 to 09/09/23	Day-1	Various principle & thermodynamic consideration for extraction of metals from sulphide ores.	
	Day-2	Various principle & thermodynamic consideration for extraction of metals from sulphide ores.	
	Day-3	Properties uses & deposits of copper.	
Wk-7 11/9/23 to 16/09/23	Day-1	Concentration & roasting of copper ore.	
	Day-2	Matte smelting/ matte preparation.	
	Day-3	Converting of Matte to Blister Copper.	
	Day-4	Refining of blister copper (Fire refining & Electrolytic refining)	
Wk-8 18/09/23 to 23 09/23			
	Day-1	Minerals, Properties uses & deposits of lead.	
	Day-2	Roasting & sintering of lead ore.	
Wk-9 25/09/23 to 30/09/23	Day-1	Blast furnace smelting of lead ore (Cone) & production of base bullion.	
	Day-2	Refinining of base bullion & review of Cu & Pb extraction	

	Day-3	Class test on extraction of Copper & lead.	
	Day-4	Extraction of Zinc (Minerals, Properties uses & deposits of Zinc)	
Wk-10 02/10/20 to 07/10/23	Day-1	Roasting of Zinc concentrate, extraction/production of spelter by vertical retort process.	
	Day-2	Horizontal process of Zinc extraction & refining of Zinc.	
	Day-3	Hydrometallurgy of Zinc teaching, preparation of Zinc base solution & electrolysis.	
Wk-11 09/10/23 to 14/10/23	Day-1	Minerals, Properties, uses & deposits of Nickel.	
	Day-2	Roasting & smelting of Nickel ore.	
	Day-3	Refining of Nickel & Review of nickel extraction.	
	Day-4	Class test on extraction of metals from sulphides (Ca, Ni, Pb & Zn)	
Wk-12 16/10/23 to 21/10/23	Day-1	Introduction to metals extracted from halides. Minerals, uses properties & titanium deposits.	
	Day-2	Various types of treatment given to titanium ore.	
	Day-3	Chlorination & magnetic reduction of titanium production of ductile titanium.	
	Day-4	Process of Refining titanium.	
Wk-13 23/10/23 to 28/10/23		Puja Vacation	
Wk-14 30/10/23 to 04/11/23	Day-1	Class test on extraction of metals from halides.	
	Day-2	Introduction to precious metals & their use.	
	Day-3	Minerals, properties & uses of gold. Deposits of gold.	
	Day-4	Introduction to various process of gold extraction.	
Wk-15 06/11/23 to 11/11/23	Day-1	Details of cyanidation process of gold extraction.	
	Day-2	Gold extraction as was adopted in India.	
	Day-3	Class test on gold extraction.	
	Day-4	Introduction to secondary metals.	
Wk-16 13/11/23 to 18/11/23	Day-1	Sources of various secondary metals.	
	Day-2	Production of secondary copper.	
	Day-3	Production of secondary Pb	
	Day-4	Production of secondary Zinc.	
Wk-17 20/11/23 to 25/11/23	Day-1	Production of secondary Al.	
	Day-2	Review of secondary metal production.	
	Day-3	Discussion on pollution problem nonferrous industries.	
	Day-4	Previous year questions discussion.	
Wk-18 27/11/23 to 30/11/23	Day-1	Previous year questions discussion.	
	Day-2	Very similar test covering entire syllabus.	
	Day-3	Conclusion remark & exam tips.	

Adar
01/08/23