


Discipline: EE	Semester: 6 th Sem.	Name of the Teaching Faculty: Pallabi Mohanta
Subject: Utilization of Electrical Energy and Traction	No. of Days/per week class allotted: 04	Semester From Date: 1 August 2023 to 30 November 2023 No. of Weeks: 15
Week	Class/ Day	Theory Topics
1 st	01	Definition and Basic principle of Electro Deposition.
	02	Important terms regarding electrolysis.
	03	Faradays Laws of Electrolysis.
	04	Definitions of current efficiency, Energy efficiency, Principle of Electro Deposition..
2 nd	01	Factors affecting the amount of Electro Deposition.
	02	Factors governing the electro deposition.
	03	State simple example of extraction of metals.
	04	Application of Electrolysis.
3 rd	01	Advantages of electrical heating, Principle of Induction heating.
	02	Explain mode of heat transfer and Stephen's Law.
	03	Discuss principle of Resistance heating: Direct Resistance heating, Indirect Resistance heating.
	04	Explain working principle of direct arc furnace and indirect arc furnace.
4 th	01	Principle of Induction heat, Working principle of direct core type, vertical core type and indirect core type Induction furnace.
	02	Principle of coreless induction furnace and skin effect.
	03	Principle of dielectric heating and its application
	04	Principle of Microwave heating and its application.
5 th	01	Explain principle of arc welding.
	02	Discuss D. C. arc phenomena.
	03	Discuss A. C. arc phenomena.
	04	D.C. arc welding plants of single and multi-operation type.

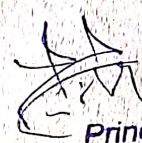
Pallabi

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Maikangudi, Odisha

	04	State Application of : universal motor and repulsion motor.
12 th	01	Explain system of traction.
	02	System of Track electrification.
	03	System of Track electrification.
	04	Running Characteristics of DC traction motor.
13 th	01	Running Characteristics of AC traction motor.
	02	Explain control of motor: Tapped field control
	03	Explain control of motor: Rheostatic control
	04	Explain control of motor: Series parallel control
14 th	01	Explain control of motor: Metadyne control
	02	Explain control of motor: Metadyne control
	03	Explain Braking of the following types: Regenerative Braking.
	04	Explain Braking of the following types: Braking with 1-phase series motor.
15 th	01	Explain Braking of the following types: Braking with 1-phase series motor.
	02	Explain Braking of the following types: Magnetic Braking
	03	Explain Braking of the following types: Magnetic Braking
	04	Revision





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