



**GOVERNMENT POLYTECHNIC ,NAYAGARH**  
**Department Of Electrical Engineering**

Semester: 5<sup>TH</sup> DIPLOMA

Subject: UEET

Branch: Electrical Engineering

Session: 2023-24

No Of Period :60 (4p/week)

Name of Faculty: Gobinda Chandra Sahoo (PTGF)

Week	Period	Topics to be covered
1 <sup>st</sup> Week	1	<b>1.ELECTROLYTIC PROCESS:</b> Definition and Basic principle of Electro Deposition
	2	Important terms regarding electrolysis, Faradays Laws of Electrolysis.
	3	Definitions of current efficiency, Energy efficiency
	4	Principle of Electro Deposition
2 <sup>nd</sup> Week	5	Factors affecting the amount of Electro Deposition.
	6	Factors governing the electro deposition
	7	State simple example of extraction of metals.
	8	Application of Electrolysis.
3 <sup>rd</sup> Week	9	<b>2.ELECTRICAL HEATING:</b> Advantages of electrical heating
	10	Mode of heat transfer and Stephen's Law
	11	Principle of Resistance heating. (Direct resistance and indirect resistance heating.)
	12	Discuss working principle of direct arc furnace and indirect arc furnace.
4 <sup>th</sup> Week	13	Principle of Induction heating 1) Working principle of direct core type, vertical core type and indirect core type Induction furnace
	14	Principle of Induction heating 2) Principle of coreless induction furnace and skin effect
	15	Principle of dielectric heating and its application
	16	Principle of Microwave heating and its application
5 <sup>th</sup> Week	17	<b>3.PRINCIPLES OF ARC WELDING:</b> Explain principle of arc welding
	18	Discuss D. C. Arc phenomena
	29	Discuss A. C. Arc phenomena
	20	D.C. arc welding plants of single and multi-operation type

6 <sup>th</sup> Week	21	A. C. arc welding plants of single and multi-operation type
	22	Types of arc welding
	23	Explain principles of resistance welding
	24	Descriptive study of different resistance welding methods
7 <sup>th</sup> Week	25	<b>4.ILLUMINATION:</b> Nature of Radiation and its spectrum
	26	Terms used in Illuminations
	27	Explain the inverse square law and the cosine law
	28	Explain polar curves
8 <sup>th</sup> Week	29	Describe light distribution and control. Explain related definitions like maintenance factor and depreciation factors
	30	Design simple lighting schemes and depreciation factor
	31	Constructional feature and working of Filament lamps, effect of variation of voltage on working of filament lamps
	32	Explain Discharge lamps
9 <sup>th</sup> Week	33	State Basic idea about excitation in gas discharge lamps.
	34	State constructional features and operation of Fluorescent lamp. (PL and PLL Lamps)
	35	Sodium vapor lamps
	36	High pressure mercury vapor lamps.
10 <sup>th</sup> Week	37	Neon sign lamps.
	38	High lumen output & low consumption fluorescent lamps.
	39	<b>5.INDUSTRIAL DRIVES:</b> State group and individual drive
	40	Method of choice of electric drives.,
11 <sup>th</sup> Week	41	State Application of DC motor
	42	State Application of 3-phase induction motor.
	43	State Application of 3 phase synchronous motors
	44	State Application of Single phase induction, series motor
12 <sup>th</sup> Week	45	State Application of universal motor and repulsion motor
	46	<b>6.ELECTRIC TRACTION:</b> Explain system of traction.
	47	System of Track electrification.
	48	Running Characteristics of DC and AC traction motor
13 <sup>th</sup> Week	49	Explain control of motor: Tapped field control.
	50	Rheostatic control
	51	Series parallel control.
	52	Multi unit control.

14 <sup>th</sup> Week	53	Metadyne control
	54	Explain Braking of the following types: Regenerative Braking.
	55	Braking with 1-phase series motor
	56	Magnetic Braking.
15 <sup>th</sup> week	57	Previous Question Discussion
	58	Previous Question Discussion
	59	Previous Question Discussion
	60	Previous Question Discussion

Gobinda Chandra Sahoo

Signature of Faculty

Shameer  
Signature of HOD 07/07/2022