



GANDHI SCHOOL OF ENGINEERING

BHABANDHA, BERHAMPUR

BRANCH:- ELECTRICAL ENGINEERING

SEMESTER:- 5TH

SUBJECT:- UEET

Name of the Faculty- ER. AMARESH CHOUDHURY & ER. S.K PALO

			Topic to be taken			Actual topic taken		
Sl. No	Topic/Module	No. of period	Details of the topics	Date	Topic No.	Topic Name	Date	Remarks
1	ELECTROLYTIC PROCESS	08	1.1. Definition and Basic principle of Electro Deposition. 1.2. Important terms regarding electrolysis. 1.3. Faradays Laws of Electrolysis. 1.4. Definitions of current efficiency, Energy efficiency. 1.5. Principle of Electro Deposition. 1.6. Factors affecting the amount of Electro Deposition. 1.7. Factors governing the electro deposition. 1.8. State simple example of extraction of metals. 1.9. Application of Electrolysis	20.09.2022 TO 15.10.2022	1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9	Definition and Basic principle of Electro Deposition. Important terms regarding electrolysis. Faradays Laws of Electrolysis. Definitions of current efficiency, Energy efficiency. Principle of Electro Deposition. Factors affecting the amount of Electro Deposition. Factors governing the electro deposition. State simple example of extraction of metals. Application of Electrolysis	20.09.2022 22.09.2022 27.09.2022 28.09.2022 29.09.2022 11.10.2022 13.10.2022	

						Factors governing the electro deposition. State simple example of extraction of metals. Application of Electrolysis	15.10.2022	
2	ELECTRICAL HEATING	08	<p>2.1. Advantages of electrical heating.</p> <p>2.2. Mode of heat transfer and Stephen's Law.</p> <p>2.3. Principle of Resistance heating. (Direct resistance and indirect resistance heating.)</p> <p>2.4. Discuss working principle of direct arc furnace and indirect arc furnace.</p> <p>2.5. Principle of Induction heating.</p> <p>2.5.1. Working principle of direct core type, vertical core type and indirect core type Induction furnace.</p> <p>2.5.2. Principle of coreless induction furnace and skin effect.</p> <p>2.6. Principle of dielectric heating and its application.</p> <p>2.7. Principle of Microwave heating and its application.</p>	17.10.2022 TO 14.11.2022	<p>2.1</p> <p>2.2</p> <p>2.3</p> <p>2.4</p> <p>2.5</p> <p>2.5.1</p> <p>2.5.2</p> <p>2.6</p> <p>2.7</p>	<p>Advantages of electrical heating.</p> <p>Mode of heat transfer and Stephen's Law.</p> <p>Principle of Resistance heating. (Direct resistance and indirect resistance heating.)</p> <p>Discuss working principle of direct arc furnace and indirect arc furnace.</p> <p>Principle of Induction heating.</p> <p>Discuss working principle of direct arc furnace and indirect arc furnace.</p> <p>Principle of Induction heating.</p> <p>Working principle of direct core type, vertical core type and indirect core type Induction furnace.</p> <p>Principle of coreless induction furnace and skin effect.</p> <p>Principle of dielectric heating and its application.</p> <p>Principle of Microwave heating and its application.</p>	<p>17.10.2022</p> <p>18.10.2022</p> <p>22.10.2022</p> <p>21.10.2022</p> <p>26.10.2022</p> <p>27.10.2022</p> <p>01.11.2022</p> <p>03.11.2022</p>	

3	PRINCIPLES OF ARC WELDING	08	<p>3.1. Explain principle of arc welding.</p> <p>3.2. Discuss D. C. & A. C. Arc phenomena.</p> <p>3.3. D.C. & A. C. arc welding plants of single and multi-operation type.</p> <p>3.4. Types of arc welding.</p> <p>3.5. Explain principles of resistance welding.</p> <p>3.6. Descriptive study of different resistance welding methods</p>	<p>05.11.2022 TO 24.11.2022</p>	<p>3.1 Explain principle of arc welding.</p> <p>3.2 Discuss D. C. & A. C. Arc phenomena.</p> <p>3.3 D.C. & A. C. arc welding plants of single and multi-operation type.</p> <p>3.4 Types of arc welding.</p> <p>3.5 Explain principles of resistance welding.</p> <p>3.6 Descriptive study of different resistance welding methods</p>	<p>05.11.2022 10.11.2022 12.11.2022 14.11.2022 15.11.2022 17.11.2022 21.11.2022 24.11.2022</p>	
4	ILLUMINATION	12	<p>4.1. Nature of Radiation and its spectrum.</p> <p>4.2. Terms used in Illuminations. [Lumen, Luminous intensity, Intensity of illumination, MHCP, MSCP, MHSCP, Solid angle, Brightness, Luminous efficiency.]</p> <p>4.3. Explain the inverse square law and the cosine law.</p> <p>4.4. Explain polar curves.</p> <p>4.5. Describe light distribution and control. Explain related definitions like maintenance factor and depreciation factors.</p> <p>4.6. Design simple lighting schemes and depreciation factor.</p> <p>4.7. Constructional feature and working of Filament lamps, effect of variation of voltage on working of filament lamps.</p> <p>4.8. Explain Discharge lamps.</p> <p>4.9. State Basic idea about excitation in gas discharge lamps.</p> <p>4.10. State constructional factures and operation of Fluorescent lamp. (PL and PLL</p>	<p>26.11.2022 TO 15.12.2022</p>	<p>4.1 Nature of Radiation and its spectrum.</p> <p>4.2 Terms used in Illuminations. [Lumen, Luminous intensity, Intensity of illumination, MHCP, MSCP, MHSCP, Solid angle, Brightness, Luminous efficiency.]</p> <p>4.3 Explain the inverse square law and the cosine law.</p> <p>4.4 Explain polar curves.</p> <p>4.5 Describe light distribution and control. Explain related definitions like maintenance factor and depreciation factors.</p> <p>4.6 Design simple lighting schemes and depreciation factor.</p> <p>4.7 Constructional feature and working of Filament lamps, effect of variation of voltage on working of filament lamps.</p> <p>4.8 Explain Discharge lamps.</p> <p>4.9 State Basic idea about excitation in gas discharge lamps.</p> <p>4.10 State constructional factures and operation of Fluorescent lamp. (PL and PLL</p>	<p>26.11.2022 02.12.2022 05.12.2022 07.12.2022 08.12.2022 09.12.2022 09.12.2022 10.12.2022 12.12.2022</p>	

			<p>Lamps)</p> <p>4.11. Sodium vapor lamps.</p> <p>4.12. High pressure mercury vapor lamps.</p> <p>4.13. Neon sign lamps.</p> <p>4.14. High lumen output & low consumption fluorescent lamps.</p>			<p>Constructional feature and working of Filament lamps, effect of variation of voltage on working of filament lamps.</p> <p>Explain Discharge lamps. State Basic idea about excitation in gas discharge lamps.</p> <p>State constructional features and operation of Fluorescent lamp. (PL and PLL Lamps)</p> <p>Sodium vapor lamps.</p> <p>High pressure mercury vapor lamps.</p> <p>Neon sign lamps.</p> <p>High lumen output & low consumption fluorescent lamps.</p>	<p>14.12.2022</p> <p>15.12.2022</p> <p>15.12.2022</p>	
5	INDUSTRIAL DRIVES:	10	<p>5.1. State group and individual drive.</p> <p>5.2. Method of choice of electric drives.</p> <p>5.3. Explain starting and running characteristics of DC and AC motor.</p> <p>5.4. State Application of:</p> <p>5.4.1. DC motor.</p> <p>5.4.2. 3-phase induction motor.</p> <p>5.4.3. 3 phase synchronous motors.</p> <p>5.4.4. Single phase induction, series motor, universal motor and repulsion motor.</p>	<p>16.12.2022</p> <p>TO</p> <p>03.01.2022</p>	<p>5.1</p> <p>5.2</p> <p>5.3</p> <p>5.4</p> <p>5.4.1</p> <p>5.4.2</p> <p>5.4.3</p> <p>5.4.4</p>	<p>State group and individual drive.</p> <p>Method of choice of electric drives.</p> <p>Explain starting and running characteristics of DC and AC motor.</p> <p>State Application of:</p> <p>3-phase induction motor.</p> <p>3 phase synchronous motors.</p> <p>Single phase induction, series motor, universal</p>	<p>16.12.2022</p> <p>17.12.2022</p> <p>19.12.2022</p> <p>21.12.2022</p> <p>21.12.2022</p> <p>22.12.2022</p> <p>23.12.2022</p> <p>03.01.2023</p>	

						motor and repulsion motor.		
6	ELECTRIC TRACTION:	14	6.1. Explain system of traction. 6.2. System of Track electrification. 6.3. Running Characteristics of DC and AC traction motor. 6.4. Explain control of motor: 6.4.1. Tapped field control. 6.4.2. Rheostatic control. 6.4.3. Series parallel control. 6.4.4. Multi-unit control. 6.4.5. Metadyne control. 6.5. Explain Braking of the following types: 6.5.1. Regenerative Braking. 6.5.2. Braking with 1-phase series motor. 6.5.3. Magnetic Braking.	03.01.2023 TO 10.01.2023	6.1 6.2 6.3 6.4 6.4.1 6.4.2 6.4.3 6.4.4 6.4.5 6.5 6.5.1 6.5.2 6.5.3	System of traction. System of Track electrification. Running Characteristics of DC and AC traction motor. Explain control of motor: Tapped field control. Rheostat control. Series parallel control. Multi-unit control. Metadyne control. Explain Braking of the following types: Regenerative Braking. Braking with 1-phase series motor. Magnetic Braking.	03.01.2023 05.01.2023 09.01.2023 10.01.2023 10.01.2023	


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