

UTILIZATION OF ELECTRIC POWER AND TRACTION

L T P Cr
4 0 0 4

Theory: 60
Class Work: 40
Total: 100

Duration of Exam: 3 Hrs

Name of the Teacher: Atma Ram
Class: B.Tech (EL) 8th Semester

Unit	Planned Topic	Hours
Illumination	Basics of illumination and laws of illumination	1
	illumination due to a strip and circular disc,	1
	light sources and their characteristics,	1
	Numerical related to illumination	1
	lighting schemes, incandescent lamp,	1
	sodium lamp, mercury lamp	1
	Fluorescent Lamp	1
Electric Heating	Comparison of various lamps.	1
	What is heating and its principle	1
	type of heating	1
	Resistance heating and its type	1
	Induction heating and its type	1
	Dielectric heating and its advantages and disadvantages	1
Electric Welding	Temperature control	1
	What is welding and advantages of electric welding	1
	Resistance welding and its type	1
	Resistance welding and its type	1
	ARC WELDING and type of arc welding	1
	ARC WELDING and type of arc welding	1
	welding generator	1
	welding transformer	1
Electrolyting Process	properties of arcing electrode	1
	What is electrolysis and its Principles	1
	Faraday's law of electrolysis,	1
	Application of electrolysis Electroplating.	1
	electro deposition ,	1
	Charging and discharging of batteries	1
Electric Traction	Defects in batteries	1
	What is traction and advantages of electric traction	1
	Requirements of ideal traction system	1
	Train movements	1
	Mechanism of train movements	1
	Various types of Time speed curve	1

Electric Traction	Related numerical to speed curve	1
	Traction motor	1
	Various type of traction motor	1
	Speed control of motor.	1
	Multi-unit control of traction motor	1
	Braking	1
	Types of braking	1
	Thyristor control of traction motor.	1

Total lectures - 40

REFERENCE BOOKS

1. Utilization of electric energy: Open Shaw Taylor; ELBS
2. Art and Science of Utilization of Electrical energy: H. Pratab; Dhanpat Rai
3. Generation, distribution and utilization of electric power: C.L. Wadhwa; Khanna Publications