

LESSON PLAN

Name of the Institute:	C. V. RAMAN POLYTECHNIC	
Department:	ELECTRICAL ENGINEERING	
Semester/Division/Branch:	5 th SEM/EE	
Subject Name with code:	UTILIZATION OF ELECTRICAL ENERGY AND TRACTION (TH-4)	
Total No. of Class (Required):	60	
Faculty Name:	RASHMI RANJAN MARTHA	
Class No.	<i>Brief description of the Topic/Chapter to be taught</i>	Remarks
1	Definition and Basic principle of Electro Deposition	
2	Important terms regarding electrolysis	
3	Faradays Laws of Electrolysis.	
4	Definitions of current efficiency, Energy efficiency.	
5	Principle of Electro Deposition.	
6	Factors affecting the amount of Electro Deposition. Factors affecting the amount of Electro Deposition & Factors governing the electro deposition	
7	Factors governing the electro deposition Factors affecting the amount of Electro Deposition & Factors governing the electro deposition	
8	State simple example of extraction of metals	
9	Advantages of electrical heating. Mode of heat transfer and Stephen's Law. 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	
13	Principle of Induction heating.	

14	Working principle of direct core type, vertical core type	
15	indirect core type Induction furnace.	
16	Principle of coreless induction furnace and skin effect.	
17	Principle of dielectric heating and its application	
18	Principle of Microwave heating and its application	
19	problems	
20	Explain principle of arc welding.	
21	Discuss D. C. & A. C. Arc phenomena.	
22	D.C. & A. C. arc welding plants of single	
23	D.C. & A. C. arc welding plants of multi-operation type.	
24	Types of arc welding.	
25	Explain principles of resistance welding.	
26	Descriptive study of different resistance welding methods.	
27	Nature of Radiation and its spectrum	
28	Terms used in Illuminations. [Lumen]	
29	Luminous intensity, Intensity of illumination,	
30	MHCP, MSCP	
31	problems	
32	MHSCP, Solid angle	
33	Brightness, Luminous efficiency	
34	Explain the inverse square law	
35	the cosine law.	
36	Explain polar curves.	
37	Describe light distribution and control	
38	Explain related definitions like maintenance factor	
39	depreciation factors.	
40	problems	

41	Design simple lighting schemes	
42	Design simple lighting schemes	
43	depreciation factor.	
44	Constructional feature and working of Filament lamps	
45	effect of variation of voltage on working of filament lamps	
46	Explain Discharge lamps.	
47	State Basic idea about excitation in gas discharge lamps	
48	State constructional factures	
49	operation of Fluorescent lamp	
50	(PL and PLL) Lamps)	
51	Sodium vapor lamps.	
52	High pressure mercury vapor lamps.	
53	Neon sign lamps.	
54	High lumen output & low consumption fluorescent lamps.	
55	State group and individual drive. Method of choice of electric drives	
56	starting and running characteristics of DC and AC motor	
57	State Application of all machines	
58	Explain system of traction and track electrification	
59	Running Characteristics of DC and AC traction motor.	
60	Explain control of motor Explain Braking of the following types	

Rashmiranjan Marthia
Signature of the Faculty

Dashu
Signature of the H.O.D