

**LESSONPLAN**  
**Session(2022-2023)**

<b>Discipline:</b> Electrical	<b>Semester:</b> 4 <sup>th</sup> , Summer/2023	<b>NameoftheFaculty:</b> Nabin Kumar Pradhan Lecturer
<b>Subject:</b> Generation, Transmission&Distribution (Theory-4)	<b>No.ofDays/week:</b> 04	<b>StartDate:</b> 15/02/2023 <b>EndDate:</b> 23/05/2023

<b>Week</b>	<b>ClassDay</b>	<b>TheoryTopics</b>
1st	1st	<b>GENERATION OF ELECTRICITY</b> Elementary idea on generation of electricity from Thermal, Hydel power station.
	2nd	IntroductiontoNuclearPowerstation.
	3rd	IntroductiontoSolarPowerPlant(Photovoltaic cells)
	4th	Layoutdiagramofgeneratingstations.
2nd	1st	Drawlayoutoftransmissionanddistribution scheme.
	2nd	<b>TRANSMISSIONOFELECTRIC POWER</b> VoltageRegulation&efficiencyof transmission.
	3rd	Coronaand Coronalossontransmission lines.
	4th	<b>OVERHEADLINES</b> Kelvin'slawforeconomicalsizeofconductor
3rd	1st	Statypes of supports, sizeand spacing of conductor.
	2nd	Typesofconductormaterials
	3dr	Statypes ofinsulatorand cross arms.
	4th	Derivefor sagin overheadlinewithsupport atsame level.

4th	1st	Derive for sag in overhead line with support at different level.
	2nd	Approximate formulae effect of wind, ice and temperature on sag simple problem.
	3rd	Problems on sag with support at different level.
	4th	Problems on sag on taking the effect of wind, ice and temperature.
5th	1st	<b>PERFORMANCE OF SHORT &amp; MEDIUM LINES</b> Calculation of regulation and efficiency of short transmission line.
	2nd	Calculation of regulation and efficiency of medium transmission line by nominal T-method
	3rd	Calculation of regulation and efficiency of medium transmission line by nominal $\pi$ -method, Problems on Nominal-T & Nominal- $\pi$ method.
	4th	Quiz Test-2
6th	1st	<b>EHV TRANSMISSION</b> Explain EHV AC transmission. Explain HVDC transmission.
	2nd	Reasons for adoption of EHV AC transmission
	3rd	Problems involved in EHV transmission.
	4th	Advantages and Limitations of HVDC transmission system
7th	1st	<b>DISTRIBUTION SYSTEMS</b> Introduction to Distribution System.
	2nd	Connection Schemes of Distribution System (Radial, Ring Main)
	3rd	Connection Schemes of Interconnected system Distribution System
	4th	DC Distributor-Distributor fed at one end & problems
8th	1st	DC Distributor-Distributor fed at both end & problems
	2nd	Ring Distributors & Problems.
	3rd	Method of solving AC distribution & problems
	4th	Three phase-four wire star connected system arrangement.

9th	1st	Numerical problem on D.C distributor
	2nd	<b>UNDERGROUND CABLES</b> Cable insulation and classification of cables
	3rd	Types of L.T. & H.T. cables with constructional feature.
	4th	Explain Methods of cable laying
10th	1st	Localization of cable faults – Murray loop test for short circuit fault
	2nd	Localization of cable faults – Murray loop test for Earth fault.
	3rd	<b>ECONOMIC ASPECTS</b> Causes of low power factor
	4th	Methods of improvement of power factor
11th	1st	Factors affecting the economic of generation: (Define and explain) Load curves, Demand factor, Maximum demand, Load factor.
	2nd	Diversity factor, Plant capacity factor.
	3rd	Numerical problems on different factors
	4th	Numerical problems on different factors.
12th	1st	Peak load and Base load on power station.
	2nd	<b>TYPES OF TARIFF</b> Desirable characteristic of a tariff.
	3rd	flat rate and two part tariff
	4th	block rate tariff with problems
13th	1st	Numerical problem on tariff
	2nd	Numerical problem on tariff
	3rd	<b>SUBSTATION</b> Layout of LT substation.
	4th	Layout of HT substation.
14th	1st	Layout of EHT substation.
	2nd	Earthling of Substation, transmission and distribution lines
	3rd	Review Class
	4th	Quiz Test-2
15th	1st	Expected Questions Discussion & Practice Test 1

2nd	Expected Questions Discussion & Practice Test 2
3rd	Expected Questions Discussion & Practice Test 3
4th	Expected Questions Discussion & Practice Test 4

Nabin Kumar  
Pradhan  
Signature of the faculty

  
15/2/23  
Signature of the Principal