

Discipline: Electrical Engg.	Semester: 4th Sem	Name of the Teaching Faculty: Er. Archana parida & Prabin Kumar Sahoo
<b>Subject: Th4. GENERATION TRANSMISSION &amp; DISTRIBUTION</b>	No of Days / Per week class allotted: 4 Classes P/W - (60)	Semester From Date: 13/02/2023 To Date: 23/05/2023 No. Of Weeks: 15
<b>WEEK</b>	<b>CLASS DAY</b>	<b>THEORY/PRACTICAL TOPICS</b>
1 <sup>st</sup>	1 <sup>st</sup>	<b>1.GENERATION OF ELECTRICITY</b> 1.1.1 Elementary idea on generation of electricity from Thermal Power station.
	2 <sup>nd</sup>	1.1.2 Elementary idea on generation of electricity from Hydel Power station.
	3 <sup>rd</sup>	1.1.3 Elementary idea on generation of electricity from Nuclear Power station.
	4 <sup>th</sup>	Doubt clear class
2 <sup>nd</sup>	1 <sup>st</sup>	1.2 Introduction to Solar Power Plant (Photovoltaic cells)
	2 <sup>nd</sup>	Revision class
	3 <sup>rd</sup>	1.3 Layout diagram of generating stations.
	4 <sup>th</sup>	<b>2. TRANSMISSION OF ELECTRIC POWER</b> 2.1 Layout of transmission and distribution scheme.
3 <sup>rd</sup>	1 <sup>st</sup>	2.2 Voltage Regulation & efficiency of transmission.
	2 <sup>nd</sup>	2.3 State and explain Kelvin's law for economical size of conductor.
	3 <sup>rd</sup>	Revision class
	4 <sup>th</sup>	2.4 Corona and corona loss on transmission lines.
4 <sup>th</sup>	1 <sup>st</sup>	<b>3. OVER HEAD LINES</b> 3.1 Types of supports, size and spacing of conductor.
	2 <sup>nd</sup>	3.2 Types of conductor materials.
	3 <sup>rd</sup>	Doubt clear class
	4 <sup>th</sup>	3.3 State types of insulator and cross arms.
5 <sup>th</sup>	1 <sup>st</sup>	3.4 Sag in overhead line with support at same level and different level. (approximate formula effect of wind, ice and temperature on sag).
	2 <sup>nd</sup>	3.5 Simple problem on sag.
	3 <sup>rd</sup>	Class test
	4 <sup>th</sup>	<b>4. PERFORMANCE OF SHORT &amp; MEDIUM LINES.</b> 4.1. Calculation of regulation and efficiency.
6 <sup>th</sup>	1 <sup>st</sup>	Performance of short transmission line
	2 <sup>nd</sup>	Continue previous class

0	3 <sup>rd</sup>	Continue previous class
	4 <sup>th</sup>	Performance of medium transmission line
7 <sup>th</sup>	1 <sup>st</sup>	Continue previous class
	2 <sup>nd</sup>	Solve numerical problems.
	3 <sup>rd</sup>	<b>5. EHV TRANSMISSION</b> 5.1 EHV AC transmission.
	4 <sup>th</sup>	5.1.1. Reasons for adoption of EHV AC transmission.
8 <sup>th</sup>	1 <sup>st</sup>	Doubt clear class
	2 <sup>nd</sup>	5.1.2. Problems involved in EHV transmission
	3 <sup>rd</sup>	5.2 HV DC transmission
	4 <sup>th</sup>	Continue previous class
9 <sup>th</sup>	1 <sup>st</sup>	5.2.1. Advantages and Limitations of HVDC transmission system.
	2 <sup>nd</sup>	<b>6. DISTRIBUTION SYSTEMS</b> 6.1 Introduction to Distribution System
	3 <sup>rd</sup>	6.2 Connection Schemes of Distribution System: (Radial, Ring Main and Inter connected system)
	4 <sup>th</sup>	6.3 DC distributions.
10 <sup>th</sup>	1 <sup>st</sup>	6.3.1 Distributor fed at one End.
	2 <sup>nd</sup>	6.3.2 Distributor fed at both the ends.
	3 <sup>rd</sup>	6.3.3 Ring distributors.
	4 <sup>th</sup>	6.4 AC distribution system. 6.4.1. Method of solving AC distribution problem.
11 <sup>th</sup>	1 <sup>st</sup>	6.4.2. Three phase four wire star connected system arrangement.
	2 <sup>nd</sup>	<b>7. UNDERGROUND CABLES</b> 7.1 Cable insulation and classification of cables .
	3 <sup>rd</sup>	7.2 Types of L. T. & H.T. cables with constructional features.
	4 <sup>th</sup>	7.3 Methods of cable lying.
12 <sup>th</sup>	1 <sup>st</sup>	7.4 Localization of cable faults: Murray and Varley loop test for short circuit fault / Earth fault.
	2 <sup>nd</sup>	Doubt clear class
	3 <sup>rd</sup>	Discussion previous year question papers
	4 <sup>th</sup>	<b>8. ECONOMIC ASPECTS</b> 8.1 Causes of low power factor and methods of improvement of power factor in power system.
	1 <sup>st</sup>	Continue previous class

13 <sup>th</sup>	2 <sup>nd</sup>	8.2 Factors affecting the economics of generation: (Define and explain) 8.2.1 Load curves. 8.2.2 Demand factor 8.2.3 Maximum demand. 8.2.4 Load factor. 8.2.5 Diversity factor. 8.2.6 Plant capacity factor.
	3 <sup>rd</sup>	solve numericals
	4 <sup>th</sup>	8.3 Peak load and Base load on power station.
14 <sup>th</sup>	1 <sup>st</sup>	<b>9. TYPES OF TARIFF</b> 9.1. Desirable characteristic of a tariff.
	2 <sup>nd</sup>	9.2. Explain flat rate, block rate, two part and maximum demand tariff. (Solve Problems)
	3 <sup>rd</sup>	Continue previous class
	4 <sup>th</sup>	<b>10. SUBSTATION</b> 10.1 Layout of LT, HT and EHT substation.
15 <sup>th</sup>	1 <sup>st</sup>	Continue previous class
	2 <sup>nd</sup>	10.2 Earthing of Substation, transmission and distribution lines.
	3 <sup>rd</sup>	Discussion previous year question papers
	4 <sup>th</sup>	Discussion previous year question papers



