

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN Session-2022-2023

Discipline: Electrical Engg. Semester: 4th

Name of the Teaching Faculty: Subesh Chandra Nayak

Subject: Generation Transmission and Distribution (GTD)

Subject: Generation Transmission and Distribution No. of Days/per week class allotted 4
Semester From Date : 14.02.2023 To Date : 23.05.2023 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
1	1	Choice of Site for Thermal, Hydel and Nuclear power plant and their advantages and Disadvantages
	2	Block diagram of Thermal Power Plant and its equipments
	3	Discussion of Thermal Power plant according to the Block (Layout) diagram
	4	Layout of Hydroelectric Power Plant. Principle & discussion of Hydroelectric Power Plant -
2	5	Layout of Nuclear Power Station. Principle and discussion of Various stages of Nuclear Power Plant.
	6	Introduction to Solar Power Plant (Photo voltaic Cells)
	7	Efficiency of Power Plant Simple Numericals
	8	Layout of Transmission & Distribution Scheme.
3	9	Voltage regulation and Efficiency of transmission
	10	Kelvin's law for economical size of conductor
	11	Corona and Corona loss on transmission lines
	12	Numericals on Corona loss and Kelvin's law.


Signature of the Faculty

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Semester From Date : 14.2.2023 To Date : 23.05.2023 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
4	13	Types of Supports, size and spacing of conductors
	14	Types of Conductor Materials
	15	Types of insulators and cross arms .
	16	Type of insulators and Cross arms . Defination of Sag .
5	17	Sag in Overhead Transmission line with support at same level and different level (formula derivation)
	18	Sag in overhead line with effect of wind and ice loading. (formula derivation)
	19	Simple numericals on Sag
	20	Various types of numericals on Sag
6	21	Classification of overhead transmission lines , Voltage regulation & Efficiency of transmission lines.
	22	%age transmission efficiency of Single phase short transmission line .
	23	Effect of load power factor on regulation and efficiency .
	24	Numericals on Transmission Efficiency .


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Semester From Date : 14.2.2023 To Date : 23.5.2023 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
7	25	Medium Transmission lines
	26	Numericals on Medium Transmission lines.
	27	EHV Transmission
	28	EHV AC transmission
8	29	Reasons for adoption of EHV AC transmission
	30	Problems involved in EHV transmission
	31	HVDC transmission
	32	Advantages and limitations of HVDC transmission System.
9	33	Comparison between EHVAC and HVDC transmission system
	34	Introduction to Distribution system.
	35	Connection Schemes of Distribution System. Radial, Ring main and Interconnected System.
	36	DC Distribution Distribution fed at one end.


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Semester From Date : 14.2.2023 To Date : 23.5.2023 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
10	37	Distribution fed at both the ends .
	38	Ring Distributors , Numericals on distribution fed at one end and both ends .
	39	AC Distribution System . Method of Solving AC distribution problem .
	40	Three phase four wire star connected system .
11	41	Underground Cables , Construction of Cables
	42	Cable insulation Insulating Materials for Cables .
	43	Classification of Cables
	44	Types of L.T. and H.T. Cables with constructional features
12	45	Method of Cable laying
	46	Localization of Cable faults . Murray and Varley loop test for short circuit fault / Earth fault .
	47	Causes of low power factor and method of improvement of power factor in power system .
	48	Factors affecting the economics of generation Define and explain Load curves .


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Semester From Date : 14.2.2023 To Date : 23.5.2023 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
13	49	Define and explain Demand factor and Maximum Demand.
	50	Define and explain Load factor and Diversity factor
	51	Define and explain Plant Capacity factor, Peakload and Base load on Power station.
	52	Discussion of Simple numericals.
14	53	Desirable Characteristics of a tariff.
	54	Explain Flat rate, block rate, two part and Maximum Demand tariff
	55	Formulation different types of tariff.
	56	Numericals on different types of tariff.
15.	57	Layout of LT and HT Substation and discussion
	58	Layout and discussion of EHT substation
	59	Earthing of Substation
	60	Earthing of transmission and distribution lines



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