

Department of Electrical Engineering

Branch: Electrical Engineering	Semester: 4th	Name of the Lecturer: Chacha Amitav Tripathy
Subject: GTD	No of classes alloted in a week: 6	Duration of Semester: 04.02.2025 - 17.05.2025
Week	Class Day	Theory Topic
1st	1	GENERATION OF ELECTRICITY: Elementary idea on generation of electricity from Thermal Power station
	2	Elementary idea on generation of electricity from Hydro Power station
	3	Elementary idea on generation of electricity from Nuclear Power station
	4	Introduction to Solar Power Plant (Photovoltaic cells).
	5	Layout of generating station
	6	TRANSMISSION OF ELECTRIC POWER: Layout of transmission and Distribution scheme
2nd	1	Voltage Regulation & Efficiency of transmission
	2	State and explain Kelvin's law for economical size of conductor
	3	Corona and corona loss on transmission lines
	4	OVERHEAD LINES: Types of supports, size and spacing of conductor
	5	Types of spacing of conductor
	6	Types of conductor materials
3rd	1	State types of insulator
	2	State types of cross arms
	3	Sag in overhead line with support at same level and different level. (approximate formula effect of wind, ice and temperature on sag)
	4	Simple problem on sag
	5	PERFORMANCE OF SHORT & MEDIUM LINES: Types of transmission line
	6	Calculation of regulation and efficiency of short transmission line
4th	1	Calculation of regulation and efficiency of medium transmission line (End condenser method)
	2	Calculation of regulation and efficiency of medium transmission line (Nominal T method)
	3	Calculation of regulation and efficiency of medium transmission line (Nominal π method)
	4	Solved Problems
	5	Solved Problems
	6	EHV transmission: EHV AC transmission, Reasons for adoption of EHV AC transmission
5th	1	Problems involved in EHV transmission
	2	HV DC transmission.
	3	Advantages of HVDC transmission system, Limitations of HVDC transmission system
	4	DISTRIBUTION SYSTEMS: Introduction to Distribution System
	5	Connection Schemes of Distribution System: (Radial, Ring Main system)
	6	Connection Schemes of Distribution System: (Inter connected system)
6th	1	DC distributions, Distributor fed at one End,
	2	Distributor fed at both the ends, Ring distributors.
	3	AC distribution system, Method of solving AC distribution problem.
	4	Three phase four wire star connected system arrangement
	5	UNDERGROUND CABLES: Cable insulation and Classification of cables
	6	Types of L. T. & H.T. cables with constructional features

7th	1	Methods of cable lying
	2	Localization of cable faults: Murray loop test for short circuit fault/ Earth fault
	3	Localization of cable faults: Varley loop test for short circuit fault/ Earth fault
	4	ECONOMIC ASPECTS: Causes of low power factor and methods of improvement of power factor in power system
	5	Factors affecting the economics of generation: (Define and explain), Load curves, Demand factor
	6	Factors affecting the economics of generation: (Define and explain) Maximum demand, Load factor
8th	1	Factors affecting the economics of generation: (Define and explain) Diversity factor, Plant capacity factor
	2	Peak load and Base load on power station
	3	TYPES OF TARIFF: Desirable characteristic of a tariff
	4	Explain flat rate, block rate, two part and maximum demand tariff.
	5	Solve Problems of flat rate, block rate, two part and maximum demand tariff.
	6	SUBSTATION: Layout of LT , HT & EHT substation
9th	1	Earthing of Substation lines, transmission lines and distribution lines
	2	Earthing of transmission & distribution lines
	3	Previous Semester Question Discussion
	4	Previous Semester Question Discussion
	5	Previous Semester Question Discussion
	6	Previous Semester Question Discussion

Signature of the
Lecturer

Signature of the
H.O.D.