

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF
ENGINEERING & TECHNOLOGY, BARGARH



PROGRESS REGISTER
Session-2022-2023

Discipline: Electrical Engg.

Semester: 4th
Section-A

Subject: Generation Transmission & Distribution

Name of the Teaching Faculty: Subesh Chandra Nayak.

Subject Generation Transmission & Distribution No. of Days/per week class allotted 4

Semester From Date : 14.02.2023 To Date : 23.05.2023 No. of Weeks : 15

Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
15.02.2023	Choice of site for Thermal Hydel & Nuclear power plant & their advantages & disadvantages	Choice of site for TH, Hydel & Nuclear P.P. & their adv & disadvantages	Site selection of Hydel, Thermal & Nuclear power plant, Adv. & Disadv.	Gay
16.02.2023	Block diagram of Thermal Power Plant and its equipment	Block diagram of Thermal P.P. & its equipment	Various blocks discussed, various equipment discussed.	Gay
20.02.2023	Discussion of thermal power plant according to the Block (layout) diagram.	Discussion of TH, Power Plant according to the Block diagram.	Boiler, Superheaters, Economiser, Air preheater, Steam turbine Alternator.	Gay
22.02.2023	Layout of Hydroelectric power plant. Principle & discussion of Hydroelectric power plant.	Layout of Hydroelectric P.P., Principle & discussion of Hydro power plant	Layout, principle Dam, Reservoir Sluice gate, power house, alternator	Gay
23.02.2023	Layout of Nuclear Power Station. Principle and discussion of various stages of Nuclear Power plant.	Layout of Nuclear Power Plant. Principle & discussion of various stages	Layout principle. fuel, Reactor Alternator etc.	Gay
25.2.2023	Introduction to Solar Power station (Photovoltaic Cell)	Introduction to Solar power station	Photovoltaic Cell principle	Gay
27.2.2023	Efficiency of Power Plant Simple Numericals.	Efficiency of Power Plant. Simple Numericals	Electrical efficiency Mech. efficiency Overall efficiency	Gay
1.3.2023	Layout of Transmission and distribution scheme.	Layout of transmission and distribution scheme.	Layout of transmission and distribution discussed	Gay
2.3.2023	Voltage regulation and efficiency of transmission	Voltage regulation & efficiency of transmission.	Voltage Regt. Transmission efficiency	Gay
4.3.2023	Kelvin's law for economical size of conductor	Kelvin's law for economical size of conductor	Kelvin's law discussed formula	Gay
6.3.2023	Corona and Corona loss on transmission lines	Corona & Corona loss on Transmission lines	Definition Disruptive critical voltage formula discussed.	Gay

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9.3.2023	Numericals on Corona loss and Kelvin's law.	Numericals on Corona loss & Kelvin's law.	Numerical solved	BSJ
11.3.2023	Types of supports, size & spacing of conductors	Types of supports, size & spacing of conductors.	Steel poles RCC poles Steel towers	BSJ
13.3.2023	Types of conductor materials.	Types of conductor materials	Copper Aluminium ACSR conductors Stranded conductors	BSJ
15.3.2023	Types of insulators and cross arms.	Types of insulators and cross arms	Pin insulators Shackle insulators Suspension insulators Cross arm	BSJ
16.3.2023	Types of insulators & cross arms Defination of Sag	Types of insulators & cross arms. Defn of Sag	Strain insulators cross arm Defination of Sag.	BSJ
18.3.2023	Sag in overhead transmission line with support at same level & diff. level (formula derivation)	Sag in overhead Tr. line with support at same diff. level. (formula derivation)	Formula derived at diff. condition	BSJ
20.3.2023	Sag in overhead line with effect of wind & ice loading (formula derivation)	Sag in overhead line with effect of wind & ice loading (formula derivation)	Formula derived with effect of wind & ice loading	BSJ
22.3.2023	Simple numericals on Sag.	Simple numericals on Sag	numericals solved	BSJ
23.3.2023	Various types of numericals on Sag.	Various types of numericals on Sag	numericals solved	BSJ
25.3.2023	Classification of overhead transmission lines. voltage regulation & Efficiency of transmission lines	Classification of overhead Tr. lines, voltage regulation & efficiency of Tr. lines.	Short Transmission line Medium long transmission line	BSJ
27.3.2023	% age transmission efficiency of single phase short transmission line.	% age of Trans. of single phase short transmission line.	% efficiency formula discussed.	BSJ

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29.3.2023	Effect of load power factor on regulation and efficiency	Effect of load P.f. on regulation and efficiency	Effect of load on P.f. on efficiency and regulation	Gay
3.4.2023	Numericals on Transmission Efficiency.	Numerical on Transmission efficiency	Numericals discussed	Gay
5.4.2023	Medium Transmission lines	Medium transmission lines	Definition formula derivation	Gay
6.4	Numericals on Medium Transmission lines.	Numerical on Medium transmission lines	Numerical Solution	Gay
8.4.	EHV Transmission	EHV Transmission	Definition characteristics	Gay
10.4	EHV AC Transmission	EHV AC Transmission	Definition characteristics	Gay
12.4	Reasons for adoption of EHV AC transmission	Reasons for adoption of EHV AC transmission	Uses of EHV AC transmission features	Gay
13.4	Problems involved in EHV transmission	Problems involved in EHV transmission	Problem of EHV transmission	Gay
15.4	HVDC Transmission	HVDC Transmission	Features of HVDC transmission Advantages Disadvantages	Gay
17.4	Adv. and limitations of HVDC Transmission System.	Adv. and limitations of HVDC Transmission System.	Advantages limitations discussed	Gay
19.4.	Comparison between EHV AC and HVDC Transmission System.	Comparison between EHV AC and HVDC Transmission.	Comparison discussed	Gay

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20.4.2023	Introduction to Distribution System.	Introduction to Distribution System.	Distribution system.	
24.4.2023	Connection Schemes of Distribution System. Radial, Ring main & Interconnected System.	Connection Schemes of Distribution System. Radial, Ring main & Interconnected System.	Definition of Radial, Ring main, interconnected system.	
26.4.2023	DC Distribution System fed at one end.	DC Distribution System fed at one end.	Distribution fed at one end	
27.4.2023	Distribution fed at both the ends.	Distribution fed at both the ends.	Distribution fed at both end	
29.4.2023	Ring distributors, Numericals on distributor fed at one end and both end.	Ring distributors Numericals on distributor fed at one end & both end.	Ring distributors Numerical discussed	
1.5.2023	AC Distribution System. Method of Solving AC distribution problem.	AC Distribution System. Method of Solving AC distribution problem	AC distribution system. Steps of solving problems	
3.5.2023	Three Phase four wire Star connected System.	Three phase four wire star connected System.	3- ϕ four wire star connected system.	
4.5.2023	Underground cables Construction of cables	Underground cables. Construction of cables.	Definition. Process of construction	
6.5.2023	Cable insulation Insulating materials for cables.	Cable insulation Insulating materials for cables.	Process of insulation Materials reqd' for insulation	
8.5.2023	Classification of cables	Classification of cables.	Classification Low tension High tension and Super tension cable.	
10.5.2023	Types of LT and HT cables with constructional features.	Types of LT & HT cables with constructional features.	LT aluminium conductor cable Copper conductor cable HT power cable	

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11.5.2023	Method of cable laying	Method of cable laying	Direct laying Draw in system Solid system	GSJ
13.5.2023	Localizing of cable faults. Murray & Vanley loop test for short circuit fault/ Earth fault	Localizing of cable faults. Murray & Vanley loop test	Cable fault Test for fault	GSJ
20.5.2023	Causes of low power factor and method of improvement of power factor in power system.	Causes of low P.f. and method of improvement of P.f. in Power system	Causes of low power factor. method discussed to improve p.f.	GSJ
22.5.2023	factors affecting the economics of generation. Define and explain load curves.	factors affecting the economics of generation. Defined explain load curves	various factors discussed. Daily, weekly and monthly load curve	GSJ
23.5.2023	Defined explain Demand factor and maximum demand	Defined explain Demand factor and maximum demand	Defination Formula	GSJ
24.5.2023	Define and explain load factor and Diversity factor.	Defined explain load factor and Diversity factor.	Defination formula Numericals	GSJ
25.5.2023	Def. and explain Plant Capacity factor, Peak load based on power station. Discussing of simple numericals.	Defined explain Plant capacity factor, Peak load based on power station. Discussion of numericals	Defination explanation Peak load Base load Numericals	GSJ
26.5.2023	Desirable characteristics of a tariff. Explain flat rate, block rate, two part & max. demand tariff.	Desirable characteristics of a tariff. Explain block rate, two part & M.D. tariff.	Defination characteristics of diff. tariff.	GSJ
27.5.2023	Formula on diff. types of tariff. Numericals on different types of tariff.	Formula on diff. types of tariff. Numericals on diff. types of tariff.	Features Formula Numericals	GSJ
29.5.2023	Layout of LT & HT Substation and discussion. Layout & discussion of EHT Substation.	Layout of LT & HT Substation. Layout & discussion of EHT Substation	Layout discussed	GSJ
31.5.2023	Earthing of Substation Earthing of transmission and distribution lines.	Earthing of Substation Earthing of transmission & distribution lines.	Advantages Pipe earthing of Plane earthing, pipe earthing in distribution system.	GSJ