

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



PROGRESS REGISTER

Discipline: Electrical Engg. Semester: 4th.

Name of the Teaching Faculty: Subesh Chandra Nayak

SEC - A

Sub: - GTD

Subject: Generation Transmission and Distribution No. Of Days/per week class allotted 4

Semester From Date : 15-04-2021 To Date : 13-08-2021 No. Of Weeks : 15

| Date | Topics to be covered as per Lesson Plan | Topics actually covered | Points/contents Discussed (in brief) | Signature of Teacher |
|-----------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------|----------------------|
| 16/4/2021 | Choice of site for Thermal, Hydel & Nuclear Power plant Advantage, Disadvantage of Power plant. | Choice of site of power plant and their Advantages & Disadvantages | Site Selection Advantages disadvantages | Gey |
| 17/4/2021 | Block Diagram of Thermal Power Plant & its equipment | Block Diagram of Thermal Power Plant & its equipment | Block Diagram Boiler Superheaters | Gey |
| 19/4/2021 | Discussion of Thermal P. P and its equipment | Discussion of Thermal Power Plant & its equipment | Economiser Airpreheater Steam turbine Alternator etc. | Gey |
| 20/4/2021 | Layout of Hydroelectric power plant. principle & discussion. | Layout of Hydroelectric power plant principle and discussion. | Layout Principle | Gey |
| 23/4/2021 | Layout of Nuclear power station principle & discussion of various stages | Layout of Nuclear power station principle and discussion. | Layout Principle. Reactor Heat exchanger | Gey |
| 24/4/2021 | Introduction to Solar Power Plant | Introduction to Solar Power Plant | Photovoltaic cell. Principle | Gey |
| 26/4/2021 | Efficiency of Power Plant. Simple numerical solution | Efficiency of Power Plant Simple numerical problem discussion | Overall efficiency Electrical efficiency Mech. eff. | Gey |
| 27/4/2021 | Layout of Transmission and distribution scheme. | Layout of Transmission & distribution scheme | Substation Transmission Distribution | Gey |
| 30/4/2021 | Voltage regulation and efficiency of Transmission | Voltage regulation and efficiency of transmission | Regulation efficiency | Gey |
| 1/5/2021 | Kelvin's law for economical size of conductor | Kelvin's law for economical size of conductor | Kelvin's law | Gey |
| 3/5/2021 | Corona & Corona loss on transmission line | Corona & Corona loss on Transmission lines. | Corona Discharge Dis. critical voltage. | Gey |
| 4/5/2021 | Numericals on Corona loss and Kelvin's law | Numerical solution on Corona loss & Kelvin's law | Numerical Solution | Gey |

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| 7/5/2021 | Types of Supports, size & spacing of conductors | Types of Supports size & spacing of conductors | Steel poles Rec poles Steel towers | Gey |
| 8/5/2021 | Types of conduction materials | Types of Conductor materials | Copper Aluminium Steel core Aluminium. | Gey |
| 10/5/2021 | Types of insulators and cross arm | Types of insulator & cross arm | Pin type, Suspension type insulator. Strain insulators | Gey |
| 11/5/2021 | Type of insulators & cross arm Def ⁿ . of Sag. | Type of insulator & cross arm. Def ⁿ . of Sag. | Shackle insulators | Gey |
| 15/5/2021 | Sag in overhead line with support at same & different level (derivation) | Sag in overhead line support at same & different level formula derivation | Def ⁿ . of Sag. Formula | Gey |
| 17/5/2021 | Simple numerical problem on Sag | numerical on Sag | Numerical Solution | Gey |
| 18/5/2021 | Simple numerical problem on Sag | numerical on Sag | Numerical Solution | Gey |
| 22/5/2021 | Classification of overhead Transmission lines voltage regulation & efficiency. | Types of overhead transmission lines voltage regulation & efficiency | Short transmission line Medium, long Tr. line. | Gey |
| 24/5/2021 | %age transmission efficiency of 1- ϕ short transmission line. | % Tr. efficiency of 1- ϕ short transmission line | % efficiency (Transmission) formula. | Gey |
| 25/5/2021 | Effect of load power factor on Regulation & efficiency | Effect of load P.f. on Regulation & efficiency | effect of P.f. discussed | Gey |
| 28/5/2021 | Medium Transmission lines | Medium Transmission lines | Formula derivation | Gey |
| 29/5/2021 | Numericals on medium Transmission lines. | Numerical on medium Transmission lines | Numerical Solution | Gey |

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| 31/5/2021 | EHV transmission | EHV transmission | Def ⁿ of EHV characteristics. | GA |
| 1/6/2021 | EHV AC transmission | EHV AC transmission | Def ⁿ . characteristics. | GA |
| 5/6/2021 | Reasons for adoption of EHV AC Transmission | Reasons for adoption of EHV AC Transmission | Uses of EHV AC Transmission features | GA |
| 7/6/2021 | Problems involved in EHV transmission | Problems involved in EHV transmission | Problems of EHV transmission | GA |
| 8/6/2021 | HVDC transmission | HVDC transmission | Features of HVDC Adv. & Disad. | GA |
| 11/6/2021 | Adv. & limitations of HVDC transmission system. | Adv. & limitation of HVDC transmission system. | limitation of HVDC Transmission | GA |
| 12/6/2021 | Comparison between EHV AC and HVDC system. | Comp. between EHV AC and HVDC system. | Comparison | GA |
| 18/6/2021 | Introduction to Distribution System. | Introduction to Distribution System. | Distribution System | GA |
| 19/6/2021 | Connection Schemes of Distribution system - Radial, Ring Main & interconnected | Connection Schemes - Radial, Ring Main & interconnected system | Def ⁿ . of Radial, Ring Main, inter-conn. system | GA |
| 21/6/2021 | DC Distribution Distributor fed at one end | DC Distribution Distributor fed at one end | Discussion distributor fed at one end | GA |
| 22/6/2021 | Distributor fed at both the ends | Distributor fed at both the ends. | Discussion distributor fed at both end | GA |
| 25/6/2021 | Ring Distributors Numerical on distributor fed at one end both end. | Ring Distributors Numerical on Distributor fed at one end and both end | Ring Dist ⁿ . Numerical discussion | GA |

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|-----------|-------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------|----------------------|
| 26/6/2021 | AC Distribution system, Method of solving AC distribution problem | AC Dis. system, Method of solving AC distribution problem | various methods Steps of solving problem | GJ |
| 28/6/2021 | Three phase four-wire star connected system | 3- ϕ four wire star connected system | Discussed Star connected 3- ϕ system. | GJ |
| 29/6/2021 | Underground cables, Construction of cables | Underground cables, Construction of cables | Defn. of under ground cable How to construct | GJ |
| 2/7/2021 | Cable insulation Insulating material for cables. | Cable insulation. Insulating material for cables | Process of insulation. Material reqd. | GJ |
| 3/7/2021 | Classification of cables | Classification of cables | Classification. | GJ |
| 5/7/2021 | Types of LT & HT Cables with constructional features | Types of LT & HT Cables with constructional features. | Different Types discussed features | GJ |
| 6/7/2021 | Method of cable laying | Method of cable laying | Direct laying Drazen system, Soleid system. | GJ |
| 10/7/2021 | Localisation of cable fault Test for short circuit fault / Earth fault | Localization of cable fault Test for short circuit/Earth fault | | GJ |
| 13/7/2021 | Causes of low Power factor & method of improvement of power factor | Causes of low P.f. and method of improvement of power factor | Various causes discussed | GJ |
| 16/7/2021 | factors effecting the economics of generation Defn. explain load curves | factors effecting the economics of generation Defn & explain Load curves | Daily, weekly, monthly, i.e. load curve. | GJ |
| 17/7/2021 | Define and explain Demand factor and Maximum Demand | Define & explain Demand factor and Maximum Demand. | Defn & formula | GJ |
| 19/7/2021 | Define & explain Load factor and Diversity factor | Load factor and Diversity factor. | Defn & formula | GJ |

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| 20/7/2021 | Discussion and Solution of numericals on Load factor & Diversity factor | Discussion & Solution of numericals on Load Factor Diversity factor. | numerical solution | Gy |
| 23/7/2021 | Defined & explain Plant Capacity factor, peak load & Base load on power station | Defn & explain Plant Capacity factor, peak load, Base load on power station | Defn. & formula | Gy |
| 24/7/2021 | Discussion of simple problems | Discussion of simple problems | numerical solution | Gy |
| 26/7/2021 | Desirable characteristics of a tariff | Desirable characteristics of a tariff. | Characteristics discussed | Gy |
| 30/7/2021 | Explain Flat rate, block rate, two part & maximum demand tariff. | Explain Flat rate, block rate, two part & max. demand tariff. | Defn. of flat rate two part & Max dem. tariff | Gy |
| 31/7/2021 | Formulae on different types of tariff | Formula on different types of tariff | Formula. discussed | Gy |
| 2/8/2021 | Layout of LT. Substation and discussion | Layout of LT. Substation and discussion | Layout discussed | Gy |
| 6/8/2021 | Layout of HT Substation and discussion. | Layout of HT Substation and discussion | Layout discussed | Gy |
| 7/8/2021 | Layout and discussion of EHT Substation. | Layout and discussion of EHT Substation. | Layout of EHT discussed | Gy |
| 9/8/2021 | Earthing of Substation. | Earthing of Substation. | Adv. features discussed Process discussed | Gy |
| 10/8/2021 | Problems on different types of Tariff | Problems on different types of Tariff | numericals discussed | Gy |
| 13/8/2021 | Earthing of transmission & distribution lines | Earthing of transmission & distribution lines | Pipe earthing of tower, plane earth, pipe earthing in dist. system discussed | Gy |