# SUDDHANANDA ENGINEERING AND RESEARCH CENTER, BBSR LESSON PLAN- 2022/23 (SUMMER)

| Discipline : ELECTRICAL ENGG. | Semester: 4th Semester | Name of the Teaching Faculty : B. Krishna Priya |
|---|---|---|
| Subject : GTD | No. of Days / per week class allotted : 04 | |

| Unit | Topics |
|---|---|
| UNIT-1 | **GENERATION OF ELECTRICITY** |
| | Elementary idea on generation of electricity from Hydel Power plant with Layout diagram of generating stations |
| | Elementary idea on generation of electricity from Thermal Power plant with Layout diagram of generating stations |
| | Elementary idea on generation of electricity from Nuclear Power plant with Layout diagram of generating stations |
| | Introduction to Solar Power Plant (Photovoltaic cells). |
| | Question Discussion |
| UNIT-2 | **TRANSMISSION OF ELECTRIC POWER** |
| | Layout of transmission and distribution scheme. |
| | Voltage Regulation & efficiency of transmission. |
| | State and explain Kelvin's law for economical size of conductor. |
| | Problem related toexplain Kelvin's law |
| | Corona and corona loss on transmission lines. |
| | Class test-1 |
| UNIT-3 | **OVER HEAD LINES** |
| | Types of supports, size and spacing of conductor. |
| | Types of conductor materials. |
| | State types of insulator and cross arms. |
| | Sag in overhead line with support at same level and different level. |
| | Sag in overhead line with support at same level and different level. (approximate formula effect of wind, ice and temperature on sag) |
| | Simple problem on sag. |
| | **PERFORMANCE OF SHORT & MEDIUM LINES** |
| | Performance of Short Transmission Line Calculation with regulation and efficiency. |

| | |
|---|---|
| UNIT-4 | Problem related to Short Transmission Line. |
| | Performance of Medium Transmission Line (End Condenser methood ) |
| | Performance of Medium Transmission Line (Nominal ∏ & Nominal T methood ) |
| | Problem related to Medium Transmission Line. |
| UNIT-5 | **EHV TRANSMISSION** |
| | EHV AC transmission. |
| | Reasons for adoption of EHV AC transmission. |
| | Problems involved in EHV transmission. |
| | Advantages and Limitations of HVDC transmission system. |
| UNIT-6 | **DISTRIBUTION SYSTEMS** |
| | Introduction to Distribution System. |
| | Connection Schemes of Distribution System: (Radial, Ring Main and Inter connected system) |
| | DC distributions & Distributor fed at one End |
| | Distributor fed at both the ends & Ring distributors. |
| | AC distribution system & Method of solving AC distribution problem. |
| | Three phase four wire star connected system arrangement. |
| | Question Discussion |
| UNIT-7 | **7. UNDERGROUND CABLES** |
| | Cable insulation and classification of cables. |
| | Types of L. T. & H.T. cables with constructional features. |
| | Methods of cable lying. |
| | Localization of cable faults: Murray loop test for short circuit fault / Earth fault. |
| | Localization of cable faults: Varley loop test for short circuit fault / Earth fault. |
| | Question Discussion |
| | **INTERNAL** |
| UNIT-8 | **ECONOMIC ASPECTS** |
| | Causes of low power factor |
| | Methods of improvement of power factor in power system |
| | Factors affecting the economics of generation: (Define and explain) &Load curves. |
| | Demand factor, Maximum demand |
| | Load factor & Diversity factor |
| | Plant capacity factor & Peak load and Base load on power station. |
| | Problem Solved |
| | Question Discussion |
| UNIT-9 | **TYPES OF TARIFF** |
| | Desirable characteristic of a tariff. |

| | |
|---|---|
| | Explain flat rate, block rate, two part and maximum demand tariff. |
| | Problem Solved |
| | **Class test-2** |
| **UNIT-10** | **SUBSTATION** |
| | Layout of LT substation. |
| | Layout of HT substation. |
| | Layout of EHT substation. |
| | Earthing of Substation, transmission lines. |
| | Earthing of Substation distribution lines. |
| | Question Discussion |
| | **Revision** |
| | **Revision** |
| | **Revision** |