Lesson Plan

Name of faculty : Er. Hanuman

Discipline : Electrical Engineering

Semester : 3rd

Subject : Power Generation and Control (EE-201-L)

Lesson plan duration : 15 weeks

|  |  |  |  |
| --- | --- | --- | --- |
| **Theory** | | | |
| **Week** | **Lecture** | **Topic (Including Assignment / Test) : Planned** | **Actually covered on (date)** |
| 1st | 1 | Introduction to subject |  |
| 2 | Load & Load Forecasting:-Load Curves, Maximum Demand, Load Factor |  |
| 3 | Diversity Factor, Capacity Factor, Utilization Factor |  |
| 4 | Types of Load , Load Forecasting |  |
| 2nd | 5 | Power Plant Economics:-Choice of type of generation |  |
| 6 | Size of generator and number of units |  |
| 7 | Cost of electrical energy, Depreciation of plants |  |
| 8 | Effect of load factor on cost of electrical energy |  |
| 3rd | 9 | Tariffs & Power factor improvement:-Different types of Tariffs |  |
| 10 | Methods of power factor improvement |  |
| 11 | Revision |  |
| 12 | Thermal Power Plants:-Choice of Site |  |
| 4th | 13 | Main & Auxiliary equipment |  |
| 14 | Fuel gas flow diagram |  |
| 15 | Water steam flow diagram |  |
| 16 | Working of power plants & their layout |  |
| 5th | 17 | Characteristics of Turbo generators |  |
| 18 | Hydro Electric Plants:-Choice of Site |  |
| 19 | Classification of Hydro Electric Plants |  |
| 20 | Main Parts of Hydro electric plants |  |
| 6th | 21 | Working of Plants |  |
| 22 | Layouts |  |
| 23 | Characteristics of Hydro electric generators |  |
| 24 | Revision |  |
| **7th** |  | **1st Sessionals** |  |
| 8th | 25 | Nuclear Power Plants:-Choice of Site |  |
| 26 | Classification of plants |  |
| 27 | Main parts of Nuclear power plant |  |
| 28 | Layout & their working |  |
| 9th | 29 | Associated problems |  |
| 30 | Diesel power plants:-Diesel plant equipment |  |
| 31 | Diesel plant layout & its working |  |
| 32 | Application of Diesel plants |  |
| 10th | 33 | Combined working of plants:-Advantages of combined operation plant |  |
| 34 | Requirement for base load & peak load operation |  |
| 35 | Combined working of run off river plant & steam plant |  |
| 36 | Revision |  |
| 11th | 37 | Power Station Equipment & Control:- Excitation System |  |
| 38 | Excitation System-Purpose & requirements of excitation system |  |
| 39 | Brushless excitation system |  |
| 40 | Voltage Regulators-Function & characteristics of automatic voltage regulators |  |
| 12th | 41 | Solid regulators |  |
| 42 | Speed governing-Purpose of speed governing system |  |
| 43 | Hydraulic type |  |
| 44 | Speed governing system for steam turbines & hydro turbines |  |
| 13th | 45 | Automatic generation control-Types of interconnection |  |
| 46 | Advantages of interconnection |  |
| 47 | Real & Reactive power control |  |
| 48 | Single area automatic generation control |  |
| **14th** |  | **2nd Sessionals** |  |
| 15th | 49 | Automatic generation control for two area system |  |
|  | 50 | Types of automatic generation control for interconnection power system |  |
|  | 51 | Assignment on Automatic generation control |  |
|  | 52 | Revision |  |