Lesson Plan

Name of faculty : Puneet Chawla

Discipline : Electrical Engineering

Semester : 5th

Subject : Generation of electrical Power

Lesson plan duration : 15 weeks

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| **Week** | **Lecture** | **Topic (Including Assignment / Test) : Planned** | **Actually covered on**  **(date)** | **HOD’s Sign** | **DP’s**  **Sign** |
| 1st | 1 | Load and loading forecasting |  |  |  |
| 2 | Load curves, maximum demand |  |  |  |
| 3 | load factor, diversity factor, capacity factor, utilization factor |  |  |  |
| 2nd | 4 | types of load, load forecasting |  |  |  |
| 5 | Power plant economics |  |  |  |
| 6 | Choice of type of generation |  |  |  |
| 3rd | 7 | size of generator and number of units |  |  |  |
| 8 | cost of electrical energy, depreciation of plant |  |  |  |
| 9 | effect of load factor on cost of electrical energy |  |  |  |
| 4th | 10 | Thermal power plants: Choice of site |  |  |  |
| 11 | main and auxiliary equipment fuel gas flow diagram |  |  |  |
| 12 | water stream flow diagram |  |  |  |
| 5th | 13 | working of power plants and their layout |  |  |  |
| 14 | characteristics of turbo generators |  |  |  |
| 15 | Hydroelectric plants: Choice of site |  |  |  |
| 6th | 16 | classification of hydroelectric plants |  |  |  |
| 17 | main parts and working of plants and their layouts |  |  |  |
| 18 | Characteristics of hydro electric generators. |  |  |  |
| **7th** |  | **1stSessionals** |  |  |  |
| 8th | 19 | Nuclear power plants: Choice of site |  |  |  |
| 20 | classification of plants, main parts |  |  |  |
| 21 | layout and their working |  |  |  |
| 9th | 22 | Diesel power plants: Diesel plant equipment |  |  |  |
| 23 | diesel plant layout and its working |  |  |  |
| 24 | application of diesel plants |  |  |  |
| 10th | 25 | Combined working of plants |  |  |  |
| 26 | Advantages of combined operation plant requirements for base load and peak load operation |  |  |  |
| 27 | Advantage of combined operation plant requirements for base load and peak load operation |  |  |  |
| 11th | 28 | Combined working of run off river plant and steam plant |  |  |  |
| 29 | Advantage and disadvantage of Combined working of run off river plant and steam plant |  |  |  |
| 30 | Tariffs |  |  |  |
| 12th | 31 | Types of tariffs |  |  |  |
| 32 | power factor improvement |  |  |  |
| 33 | Different types of tariffs |  |  |  |
| 13th | 34 | methods of power factor improvement |  |  |  |
| 35 | Numerical on load forcasting |  |  |  |
| 36 | numericalprobleam |  |  |  |
| **14th** |  | **2ndSessionals** |  |  |  |
| 15th | 37 | Discussion on 2nd sessional |  |  |  |
| 38 | revision |  |  |  |
| 39 | revision |  |  |  |

Load and loading forecasting: Load curves, maximum demand, load factor, diversity factor, capacity factor, utilization factor, types of load, load forecasting. Power plant economics: Choice of type of generation, size of generator and number of units, cost of electrical energy, depreciation of plant, effect of load factor on cost of electrical energy.

UNIT- II Thermal power plants: Choice of site, main and auxiliary equipment fuel gas flow diagram, water stream flow diagram, working of power plants and their layout, characteristics of turbo generators. Hydroelectric plants: Choice of site, classification of hydroelectric plants, main parts and working of plants and their layouts, characteristics of hydro electric generators.

UNIT- III Nuclear power plants: Choice of site, classification of plants, main parts, layout and their working, associated problems. Diesel power plants: Diesel plant equipment, diesel plant layout and its working, application of diesel plants.

UNIT- IV Combined working of plants: Advantages of combined operation plant requirements for base load and peak load operation. Combined working of run off river plant and steam plant. Tariffs and power factor improvement: Different types of tariffs and methods of power factor improvement.

REFERENCES: 1. P.K. Nag, “Power Plant Engineering”, Tata McGraw Hill.