**Govt. Polytechnic Chhapar**

**Electrical Engineering Department**

**Lesson Plan**

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| **Name of Faculty** | **Mrs. Mukesh** |
| **Discipline** | **Electrical Engineering** |
| **Semester** | **6th** |
| **Subject** | **Electrical Power – II** |
| **Lesson Plan Duration** | **From March 2022 to June 2022** |
| **Work load [Theory + Practical] Per Week** | **[04+03]** |

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| **Week** | **Theory** | | **Practical** | |
| **Lecture Day** | **Topic** | **Practical Day** | **Topic** |
| 1st | 1st | (i) Introduction to the Subject (ii) Introduction of the nature of the examination and marks distribution of different topics | 1st | Introduction to the subject and the marks distribution |
| 2nd | Common type of faults in both overhead and underground systems |
| 3rd | Symmetrical/ unsymmetrical faults. |
| 4th | Single line to ground fault, double line to ground fault, 3-phase to ground fault open circuit, simple problems relating to fault finding. |
| 2nd | 1st | Test of Chapter 01 | 1st | Testing of the dielectric strength of transformer oil and air |
| 2nd | Purpose of protective gear. Difference between switch, isolator and circuit breakers. |
| 3rd | Function of isolator and circuit breaker. Making capacity and breaking capacity of circuit breaker (only definition) |
| 4th | Circuit breakers. Types of circuit breakers: bulk and minimum oil circuit breakers |
| 3rd | 1st | Air Circuit Breaker | 1st | Study of different types of circuit breakers and isolators |
| 2nd | SF6 circuit breakers |
| 3rd | Principles of Arc extinction blast circuit breakers in OCB and ACB |
| 4th | Constructional features of OCB, ACB |
| 4th | 1st | Working and Method of arc extinction of OCB and ACB | 1st | Plot the time current characteristics of over current relay |
| 2nd | Miniature circuit breakers MCB, MCCB, ELCB, for distribution and transmission system (Descriptive) |
| 3rd | Continued |
| 4th | Test of Chapter 02 |
| 5th | 1st | Quiz No. 01 from chapter 01 and 02 and assessment of assignment No. 01 | 1st | Quiz No. 01 and Viva Voce |
| 2nd | Fuses; function of fuse. |
| 3rd | Types of fuses, HV and LV fuses, rewire-able, cartridge, HRC |
| 4th | Continued |
| 6th | 1st | Earthing: purpose of earthing, method of earthing, Equipment earthing | 1st | Power measurement by using CTs and PTs |
| 2nd | Substation earthing, system earthing as per Indian Electricity rules. |
| 3rd | Methods of reducing earth resistance |
| 4th | Introduction - types of relays. Electromagnetic and its construction and working |
| 7th | 1st | Thermal relays, their construction and working | 1st | Earthing of different equipment/Main Distribution Board and Energy Meter Box |
| 2nd | Induction type over-current, earth fault relays |
| 3rd | Instantaneous over current relay |
| 4th | Directional over-current, differential relays, their functions |
| 8th | 1st | Distance relays, their functions | 1st | Quiz No. 02 and Viva Voce |
| 2nd | Idea of static relays and their applications |
| 3rd | Test of Chapter 03 |
| 4th | Relays for generator protection |
| 9th | 1st | Relays for transformer, protection including Buchholtz relay protection | 1st | Perform the overload and short circuit test of MCB as per IS specifications |
| 2nd | Continued |
| 3rd | Protection of feeders and bus bars |
| 4th | Over current and earth fault protection. |
| 10th | 1st | Distance protection for transmission system | 1st | PPT and Viva Voce |
| 2nd | Relays for motor protection |
| 3rd | Test of Chapter 04 |
| 4th | Quiz No. 02 from chapter 03 and 04 and assessment of assignment No. 01 |
| 11th | 1st | Protection of system against over voltages, | 1st | Plot the time-current characteristics of Kit-Kat fuse wire |
| 2nd | causes of over voltages, utility of ground wire |
| 3rd | Lightning arrestors, rod gap |
| 4th | horn gap, metal oxide type |
| 12th | 1st | Transmission Line and substation protection against over-voltages and lightning | 1st | Quiz No. 03 and Viva Voce |
| 2nd | Continued |
| 3rd | Test of Chapter 05 |
| 4th | Concept of Tariffs |
| 13th | 1st | Block rate, flat rate, | 1st | Taking reading of current on any LT line with clamp on meter |
| 2nd | Numericals |
| 3rd | Maximum demand and two part tariffs |
| 4th | Numericals |
| 14th | 1st | Test of Chapter 06 | 1st | Quiz No. 04 and Viva Voce |
| 2nd | Quiz No. 03 from chapter 05 and 06; assessment of assignment No. 03 |
| 3rd | Revision test of Chapter 01 |
| 4th | Revision test of Chapter 02 |
| 15th | 1st | Revision test of Chapter 03 | 1st | Internal Assessment and Viva Voce |
| 2nd | Revision test of Chapter 04 |
| 3rd | Revision test of Chapter 05 |
| 4th | Revision test of Chapter 06 |
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