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Syllabus : Necessity, functions of protective system. Normal and Abnormal Conditions. Types of faults and their causes. Protection zones and backup protection. Short circuit fault calculations in lines fed by generators through transformers. Need of current limiting reactors and their arrangements.

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UNIT IV

Chapter 4 : Protection of Alternator and Transformer

4-1 to 4-48

Syllabus : Alternator Protection : Faults, Differential protection : over current, earth fault, overheating and field failure protection. Reverse power protection. **Transformer Protection:** Faults, Differential, over current, earth fault, over heating protection. Limitations of differential protection. Buchholz relay: Construction, operation, merits and demerits. Introduction to Microprocessor based transformer protection.

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UNIT V

Chapter 5 : Protection of Motors, Bus-bars and Transmission Line 5-1 to 5-30

Syllabus : Motor : Faults, Short Circuit Protection, Overload Protection, Single Phase Preventer, **Bus-bar and Transmission Lines**, Faults on Bus-bar and Transmission Lines. Bus bar Protection : Differential and Fault Bus Protection. Transmission Line : Over current, Distance and Pilot wire Protection.



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