

**UNIT 1****Chapter 1 : Performance of Transmission Line****1-1 to 1-26**

Syllabus : Evaluation of ABCD constants and equivalent circuit parameters of Long transmission line. Concept of complex power, power flow using generalized constants, receiving end power circle diagram for transmission line (assuming ABCD constants are already given), surge impedance loading, Line efficiency, Regulation and compensation, basic concepts. Numerical based on: ABCD constants of Long transmission line, Power flow, circle diagram.

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UNIT 3

Chapter 3 : Per Unit System and Load Flow Analysis

3-1 to 3-51

Syllabus : Per unit system : Single line diagram, Impedance and reactance diagrams and their uses, per unit quantities, relationships, selection of base, change of base, reduction to common base, advantages and application of per unit system. Numerical based on network reduction by using per unit system.

Load Flow Analysis : Network topology, driving point and transfer admittance, concept of Z-bus and formulation of Y-bus matrix using Direct method, singular transformation method, Introduction to load flow analysis, power- flow equations generalization to n bus systems, classification of buses, Newton- Raphson method (using polar coordinates - Descriptive treatment only) Numerical based on Y bus Matrix.

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UNIT 4

Chapter 4 : Symmetrical Fault Analysis 4-1 to 4-34

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