

ISHAN'S
SMART GRID
AND DISTRIBUTED
GENERATION SYSTEM

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AND DISTRIBUTED

GENERATION SYSTEM

Strictly According to New Syllabus for Sixth Semester
Electrical Engineering Students

By

Dr. D.R. Arora



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Dedication

*“For those who dare to dream,
There is a whole world to win”*

*“जो सपने देखने की हिम्मत रखते हैं
वो पूरी दुनिया जीत सकते हैं”*

to

Our beloved

Heaven Born

Sh. Parveen Narula

the founder

of

(Regd.)

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Syllabus

UNIT-I

Introduction of Smart Grid

- 1.1 Conventional Grid system: Introduction, Evolution of electric Grid system, Regulatory authority in Indian Power sector.
- 1.2 Smart Grid system: Introduction, Need of Smart Grid, Benefits of Smart Grid, Challenges of Smart Grid, Difference between Conventional Grid and Smart Grid system, Smart Grid scenario in Indian power sector

UNIT-II

Smart Grid Architecture

- 2.1 Components of smart grid system
- 2.2 Architecture of Smart Grid
- 2.3 Function of Smart Grid components

UNIT-III

Smart Grid Technology

- 3.1 Introduction to Communication and Measurement Technology
- 3.2 Smart infrastructure (smart energy system and smart information system), Smart communication, Smart management.
- 3.3 Smart Meter : Advanced meter Infrastructure (AMI) function and its benefits

UNIT-IV

Distributed Generation System

- 4.1 Distributed generation (DG): Concept of distributed generation's, selection of sources, regulatory standards/ framework, Standards for interconnecting Distributed resources to electric power systems: IEEE 1547.
- 4.2 Overview of Microgrid : concept and definition of microgrid
- 4.3 SCADA: Introduction to Supervisory Control and Data Acquisition System (SCADA), Functional block diagram, Architecture of SCADA.

UNIT-V

Smart Grids Application

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