POWER GENERATION, TRANSMISSION AND DISTRIBUTION (5091)

Teaching Schedule Per Week			Centralized Test		Examination Schedule (Marks)			
					Theory		Practical Ex.	Total
Lectures	Practical	Credits						
3	-	3	-	25	3Hrs	75	-	100

COURSE CONTENTS	Hrs	Mks

1. GENERATION — 10 — 15 mks

Terms related to generation such as load curve, base load and peak load power plant pump storage power plant, Demand factor, diversity factor, load factor, Utilization factor, choice of number and rating of units for a given load curve. Grid system, their merits & demerits.

Main sources for energy for bulk power generation, Principle of generation and plant layout. Non conventional sources – types of sources for electric power. Availability and Economical Feasibility.

Advantages & Disadvantages of Diesel Power Plant.

Stand by Diesel Generator sets. Main components and their functions.

2. TRANSMISSION. — 18 — 24mks

Component of transmission lines, Types of supports (Poles & towers) classification of towers. Types of conductor – study of different types of conductors AAC, ACSR, All Aluminum Alloy conductor, bundled conductors. General Electrical & Mechanical specification. Study of different types of insulators such as pin type; suspension type; post type, Tension Type. Material used. Comparison between pin and suspension insulators. Voltage distribution and string efficiency. Cause of failure of insulators. General specification. H.V. EHV.HVDC transmission system their main components (Insulators towers & conductors) and advantages and disadvantages of each system.

Corona: formation and its advantages and disadvantages. Methods of reduction corona loss, sag & its importance.

3.DISTRIBUTION SYSTEM — 9 — 15 Mks

Classification of distribution system w.r.t. voltage and numbers of wires, comparison between D.C.2 wire A.C. single phase and A.C.3 phase (3wire &4 wire) system . Concept of feeder distributor and service mains, Types of distributors –radial, ring and interconnected, System voltage and permissible voltage drop in various parts of distribution system for urban, semi urban and rural areas.

4. DOMESTIC WIRING — 7 — 12 mks.

Types of wiring system – PVC Casing Capping, Conduit wiring and cleat wiring Comparative study of the wiring systems and material used for each Indian Electricity Rules and standard practices relevant to light, fan and power wiring. Planning and layout of domestic installation including stair case light circuit, Godown wiring, Estimation of quantity of material for a given installation.

EARTHING — 4 — 9 mks

portance of earthing , Indian Electricity rules and Indian Standard practices for earthing of equipment mestic and industrial) . Method of earthing – pipe and plate earthing various terms related to thing, factors affecting earth resistance, ways and means to reduce earth resistance.

FERENCE BOOKS

ctrical Power System by V.K. MEHTA
ctrical power system design by M.V. Deshpande.
nsmission & distribution of Electrical Energy by Raina, Anand and Singhal
ustrial wiring by G.Polyakow, Progress pub. Moscow.
trical Design Estimating and Costing by Raina & Bhattacharya.
rical wiring Estimation and costing by Arora B.D.
ctrical Installation Estimation Costing by J.B. Gupta.