LESSON PLAN FOR. GENERATION TRANSMISSION & DISTRIBUTION (Th. 4)

Discipline: Electrical Engineering	Semester: 4th	Name of the Teaching Faculty: pradosh kumar panda (Lect.)
Subject: GENERATION TRANSMISSION & DISTRIBUTION	No. of days per week class allotted: 4	Semester From Date : 16/01/2024 to Date: 26/04/2024 No. of Weeks: 15
Week	Class Day	Theory
1st		**1. GENERATION OF ELECTRICITY**
	1st	1.1. Elementary idea on generation of electricity from Thermal Power station
	2nd	1.2. Elementary idea on generation of electricity from Hydel Power station
	3rd	1.3. Elementary idea on generation of electricity from Nuclear Power station
	4th	1.4.Introduction to Solar Power Plant (Photovoltaic cells)
2nd	1st	1.5. Layout diagram of thermal power station
	2nd	1.6.Layout diagram of hydel power station
	3rd	1.7.Layout diagram of nuclear power station
		2. TRANSMISSION OF ELECTRIC POWER
	4th	2.1. Layout of transmission and distribution scheme.
3rd	1st	2.2.Voltage Regulation of transmission.
	2nd	2.3. efficiency of transmission.
	3rd	2.4. Kelvin's law for economical size of conductor.
	4th	2.5. Corona and corona loss on transmission lines.
		3. OVER HEAD LINES
4th	1st	3.1. Types of supports, size and spacing of conductor.
	2nd	3.2. Types of conductor materials.
	3rd	3.3. State types of insulator and cross arms.
	4th	3.4. Sag in overhead line with support at same level
5th	1st	3.5. Sag in overhead line with support at different level.
	2nd	3.6. approximate formula for effect of wind, ice and temperature on sag
	3rd	3.7. Simple problem on sag.
		4. PERFORMANCE OF SHORT & MEDIUM LINES
	4th	4.1. introduction to short line
		4.2. introduction to medium lines
6th	1st	4.3. Calculation of regulation of short line
	2nd	4.4. Calculation of efficiency of short lines

	3rd	4.5. Calculation of regulation of medium line
7th	1st	4.6. Calculation of efficiency of medium lines
	2nd	4.7. simple problems on short and medium transmission lines
		5. EHV TRANSMISSION
	3rd	5.1. EHV AC transmission
	4th	*5.2. Reasons for adoption of EHV AC transmission.*
8th	1st	5.3. Problems involved in EHV transmission.
	2nd	5.4. HVDC transmission.
	3rd	5.5. Advantages of HVDC transmission system.
	4th	5.6. Limitations of HVDC transmission system.
9th	1st	5.7. doubt clearing class
		6. DISTRIBUTION SYSTEMS
	2nd	6.1. Introduction to Distribution System
	3rd	6.2. Connection Schemes of Distribution System: (Radial, Ring Main and Inter connected system)
	4th	6.3 DC distributions. 6.3.1 Distributor fed at one End. 6.3.2 Distributor fed at both the ends.
10th	1st	6.4. Ring distributors.
	2nd	6.5. AC distribution system.
	3rd	6.6. Method of solving AC distribution problem.
	4th	6.7. Three phase four wire star connected system arrangement.
		7. UNDERGROUND CABLES
11th	1st	*7.1. Cable insulation and classification of cables.*
	2nd	7.2. Types of L. T. & H.T. cables with constructional features
	3rd	7.3. Methods of cable lying
	4th	7.4 Localization of cable faults
12th	1st	7.5. Murray loop test for short circuit fault / Earth fault.
	2nd	*7.6. Varley loop test for short circuit fault / Earth fault.*
		8. ECONOMIC ASPECTS
	3rd	8.1 Causes of low power factor in power system
	4th	8.2. methods of improvement of power factor in power system
13th	1st	8.3. Factors affecting the economics of generation
	2nd	8.4. Load curves,Demand factor,Maximum demand
	3rd	8.5.Load factor,Diversity factor,Plant capacity factor
	4th	8.6. Peak load and Base load on power station
		9. TYPES OF TARIFF
14th	1st	*9.1.Desirable characteristic of a tariff.*
	2nd	9.2. Explaination of flat rate, block rate, two part and maximum demand tariff.
	3rd	9.3. simple problems on tariff

		10. SUBSTATION
	4th	10.1. Layout of LT substation
15th	1st	*10.2. Layout of HT substation*
	2nd	10.3. Layout of EHT substation
	3rd	10.4. Earthing of Substation
	4th	10.5. Earthing of transmission and distribution lines.

13/01/24
HoD ELECTRICAL ENGG.

ACADEMIC CO-ORDINATOR
13/01/24

13/01/24
SIGNATURE OF FACULTY

Lecturer in Electrical Engineering
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