ACADEMIC LESSION PLAN FOR SESSION - 2022-23 .

Dept. of Electrical Engg, Govt. Polytechnic , Malkangiri.

Name of Teaching Faculty : Er. Rajiv Ratan Patel

GENERATION TRANSMISSION & DISTRIBUTION

Course Code:Th-4
Theory :4 P/W
Total Period s: 60P/ Sem
Examination : 3 Hours
Sem : 4TH EE

Class Test : 20 Marks

End Semester Exam :80marks
TOTAL MARKS : 100 Marks

WEEK	PERIOD	TOPIC
1st	1st	GENERATION OF ELECTRICITY Elementary idea on generation of electricity from Thermal power station. & Layout diagram
	2nd	Elementary idea on generation of electricity from Thermal power station. & Layout diagram
	3rd	Elementary idea on generation of electricity from Hydro power station. & Layout diagram
	4th	Elementary idea on generation of electricity from Nuclear power station. & Layout diagram
2nd	1st	Introduction to Photovoltaic cells
	2nd	Introduction to Solar Power Plant
	3rd	TRANSMISSION OF ELECTRIC POWER Layout of transmission and distribution scheme
	4th	Layout of transmission and distribution scheme Voltage Regulation & efficiency of transmission.
3rd	1st	State and explain Kelvin`s law for economical size of conductor.
	2nd	State and explain Kelvin`s law for economical size of conductor.
	3rd	Corona and corona loss on transmission lines.
	4th	OVER HEAD LINES Types of supports, size and spacing of conductor
4th	1st	Types of supports, size and spacing of conductor Types of conductor materials.
	2nd	State types of insulator and cross arms.
	3rd	State types of insulator and cross arms.
	4th	Sag in overhead line with support at same level
5th	1st	Sag in overhead line with support at different level. (approximate formula effect of wind, ice and temperature on sag)
	2nd	Sag in overhead line with support at different level. (approximate formula effect of wind, ice and temperature on sag)
	3rd	Simple problem on sag.
	4th	**PERFORMANCE OF SHORT** Calculation of regulation and efficiency.

8/4/23
Checked
8/4/23

6th	1st	Problems on performance of short transmission lines
	2nd	**PERFORMANCE OF MEDIUM LINES** Calculation of regulation and efficiency.
	3rd	Problems on performance of medium transmission lines
	4th	**PERFORMANCE OF MEDIUM LINES** Calculation of regulation and efficiency.
7th	1st	Problems on performance of medium transmission lines
	2nd	**PERFORMANCE OF MEDIUM LINES** Calculation of regulation and efficiency.
	3rd	Problems on performance of medium transmission lines
	4th	EHV AC transmission
8th	1st	Reasons for adoption of EHV AC transmission
	2nd	Problems involved in EHV transmission.
	3rd	HV DC transmission
	4th	HV DC transmission
9th	1st	Advantages and Limitations of HVDC transmission system.
	2nd	DISTRIBUTION SYSTEMS Introduction to Distribution System
	3rd	Connection Schemes of Distribution System: (Radial, Ring Main and Inter connected system)
	4th	DC distributions. Distributor fed at one End.
10th	1st	Problems on Distributor fed at one End.
	2nd	Distributor fed at both the ends
	3rd	Problems on Distributor fed at both the Ends.
	4th	Ring distributors.
11th	1st	AC distribution system. Method of solving AC distribution problem.
	2nd	Problems on AC Distribution
	3rd	Three phase four wire star connected system arrangement.
	4th	UNDERGROUND CABLES Cable insulation and classification of cables.
12th	1st	Types of L. T. & H.T. cables with constructional features
	2nd	Types of L. T. & H.T. cables with constructional features
	3rd	Methods of cable lying.
	4th	Methods of cable lying.
13th	1st	Localization of cable faults: Murray test for short circuit fault / Earth fault.
	2nd	Varley loop test for short circuit fault / Earth fault.
	3rd	ECONOMIC ASPECTS Causes of low power factor
	4th	Methods of improvement of power factor in power system.

3/11/23

Sr. Lect (Elect)

11.23

14th	1st	Factors affecting the economics of generation: (Define and explain) Load curves. Demand factor. Maximum demand
	2nd	Load factor. Diversity factor. Plant capacity factor Peak load and Base load on power station. Problems
	3rd	TYPES OF TARIFF Desirable characteristic of a tariff
	4th	Explain flat rate, block rate(Solve Problems)
15th	1st	Explain two part and maximum demand tariff. (Solve Problems)
	2nd	SUBSTATION Layout of LT substation
	3rd	Layout of HT and EHT substation
	4th	Earthing of Substation, transmission and distribution lines

31/1/23

Cru-LeCt (Elect)