LESSON PLAN

Discipline:- **Electrical Engineering**	Semester:-**4th**	Nameoftheteachingfaculty**:-Er.S.Das**
Subject:- **Generation Transmission& Distribution**	No.ofdays/per week class allotted:-**4**	Semesterfrom:-16.01.2024-26.04.2024
Week	Classday	Theory
1st	1st	1. GENERATIONOFELECTRICITY Elementary idea on generation of electricity from Thermal, Hydel, Nuclear, Powerstation.
	2nd	Elementary idea on generation of electricity from Thermal, Hydel, Nuclear, Powerstation.
	3rd	1.2IntroductiontoSolarPowerPlant(Photovoltaiccells).
	4th	1.2IntroductiontoSolarPowerPlant(Photovoltaiccells).
2nd	1st	1.3Layoutdiagramofgeneratingstations.
	2nd	1.3Layoutdiagramofgeneratingstations.
	3rd	2. TRANSMISSIONOFELECTRICPOWER Layoutoftransmissionanddistributionscheme.
	4th	Layoutoftransmissionanddistributionscheme.
3rd	1st	2.2VoltageRegulation&efficiencyoftransmission.
	2nd	2.2VoltageRegulation &efficiencyoftransmission.
	3rd	2.3StateandexplainKelvin'slawforeconomicalsizeofconductor.
	4th	2.3StateandexplainKelvin'slawforeconomicalsizeofconductor.
4th	1st	2.4Coronaandcoronalossontransmission lines.
	2nd	2.4Coronaandcoronalossontransmission lines.
	3rd	3. OVERHEADLINES Typesofsupports,sizeandspacingofconductor.
	4th	Typesofsupports,size andspacingofconductor.
5th	1st	3.2Typesofconductormaterials.3.3 Statetypesofinsulatorandcrossarms.
	2nd	3.2Typesofconductormaterials.3.3 Statetypesofinsulatorandcrossarms.
	3rd	3.3Statetypesofinsulatorandcrossarms.
	4th	3.3Statetypesofinsulatorandcrossarms.
6th	1st	3.4Saginoverheadlinewithsupportatsamelevelanddifferentlevel. (approximateformulaeffectofwind,iceandtemperatureonsag)
	2nd	3.4 Sag in overhead line with support at same level and different level. (approximate formula effect of wind, ice and temperature on sag)
	3rd	3.5Simpleproblemonsag.
	4th	3.5Simpleproblemonsag.
7th	1st	4. PERFORMANCEOFSHORT&MEDIUMLINES Calculationofregulationandefficiency.
	2nd	Calculationofregulationandefficiency.
	3rd	5. EHVTRANSMISSION EHVACtransmission.5.1..1.ReasonsforadoptionofEHVACtransmission. 5.1..2.ProblemsinvolvedinEHV transmission.

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	4th	5.1EHVACtransmission.5.1..1.ReasonsforadoptionofEHVACtransmission. 5.1..2.ProblemsinvolvedinEHV transmission.
8th	1st	5.2 HV DC transmission. 5.2..1. Advantages and Limitations of HVDC transmissionsystem.
	2nd	5.2HVDCtransmission.5.2..1.AdvantagesandLimitationsofHVDC transmissionsystem.
	3rd	6. DISTRIBUTIONSYSTEMS IntroductiontoDistribution System.6.3DCdistributions.
	4th	IntroductiontoDistributionSystem.
9th	1st	6.2ConnectionSchemesofDistributionSystem:(Radial,RingMainandInter connectedsystem)
	2nd	6.2 Connection Schemes of Distribution System: (Radial, Ring Main and Inter connectedsystem)
	3rd	6.3DCdistributions.6.3.1DistributorfedatoneEnd.6.3.2Distributorfedat both theends.6.3.3Ringdistributors.
	4th	6.3 DC distributions. 6.3.1 Distributor fed at one End. 6.3.2 Distributor fed at both the ends. 6.3.3 Ring distributors.
10th	1st	6.4ACdistributionsystem.6.4.1.MethodofsolvingACdistributionproblem. 6.4.2.Threephasefourwirestarconnectedsystemarrangement.
	2nd	6.4ACdistributionsystem.6.4.1.MethodofsolvingACdistributionproblem. 6.4.2.Threephasefourwirestarconnectedsystemarrangement.
	3rd	7. UNDERGROUNDCABLES Cableinsulationandclassificationofcables.7.2TypesofL.T.&H.T.cables withconstructionalfeatures.7.3Methodsofcablelying.
	4th	Cableinsulationandclassificationofcables.
11th	1st	7.2TypesofL.T.&H.T.cableswith constructionalfeatures.
	2nd	7.2TypesofL.T.&H.T.cableswith constructionalfeatures.
	3rd	7.3Methodsofcablelying.
	4th	7.3Methodsofcablelying.
12th	1st	7.4Localizationofcablefaults:MurrayandVarley looptest forshortcircuit fault /Earthfault.
	2nd	7.4 Localization of cable faults: Murray and Varley loop testfor short circuit fault / Earth fault.
	3rd	8. ECONOMICASPECTS Causes of low power factor and methods of improvement of power factor in4 TH SEMESTER ELECTRICAL 15 power system. 8.3 Peak load and Base load on powerstation
	4th	Causes of low power factor and methods of improvement of power factor in 4 TH SEMESTER ELECTRICAL 15 power system.
13th	1st	8.2Factorsaffectingtheeconomicsofgeneration:(Defineandexplain)8.2.1 Loadcurves.8.2.2Demandfactor.8.2.3Maximumdemand.8.2.4Loadfactor. 8.2.5Diversityfactor.8.2.6 Plantcapacityfactor.
	2nd	8.2Factorsaffectingtheeconomicsofgeneration:(Defineandexplain)8.2.1 Loadcurves.8.2.2Demandfactor.8.2.3Maximumdemand.8.2.4Loadfactor. 8.2.5Diversityfactor.8.2.6 Plantcapacityfactor.
	3rd	8.3PeakloadandBaseloadonpowerstation.
	4th	8.3PeakloadandBaseloadonpowerstation.

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14th	1st	9. TYPESOF TARIFF Desirablecharacteristicofatariff.
	2nd	Desirablecharacteristicofatariff.
	3rd	9.2.Explainflatrate,blockrate, twopartandmaximumdemandtariff.(Solve Problems)
	4th	9.2. Explain flat rate, block rate, two part and maximum demand tariff. (Solve Problems)
15th	1st	10. SUBSTATION LayoutofLT,HTandEHT substation.
	2nd	LayoutofLT,HTandEHTsubstation.
	3rd	10.2EarthingofSubstation,transmissionanddistributionlines.
	4th	10.2EarthingofSubstation,transmissionanddistributionlines.