

GOVT. POLYTECHNIC KORAPUT DEPARTMENT OF ELECTRICAL ENGG.

LESSON PLAN

Name of the faculty :R.hansda Discipline:----:: Electrical Semester :4th Subject

:Energy Conversion-1 Duration

Week			week : Total Period-75 (60L + 15T)
1	Lectur e day		Topic
	1	1	DC GENRATORS 17-Intoduction machines to the contract of the co
	2	2	DC GENRATORS 17-Intoduction, machines types, operation principle of generator Constructional features of dc
	3	3	generatorsyoke,pole&fieldwinding,armature,commutator
	4	4	Armature winding, backpitch, frontpitch, resultant pitch, commutator pitch Simple lap and wave winding, dummycoils, types of dc generators (shunt, series compund)
	5	T1	Tutorial
2	1	5	
	2	6	Shunt series compound dc m/c,derivation of EMf equation of dc generators Solve problems
	3	7	Lossess and efficiency of dc generator, condition for maximum efficiency and numerical problem
	4	8	numerical problem
	5	T2	Tutorial
3	1	9	Armature reaction in dc machines
	2	10	Comutation and methods of improving comutation.
	3	11	Role of inter poles and compensatingwinding in comutations.
	4	12	Character of dc generators. Application of different types of dc generators.
	5	T3	Tutorial Tutorial
4	1	13	Concept of critical resistance and critical of speed of dc shunt generator
	2	14	Condition of build up of emf of dc generator.
	3	15	Parallel operation of dc generator.
	4	16	Uses of dc genrators.
	5	17	Uses of dc genrators.
5	1	1	2.D. C. MOTORS-15 Basic working principle of DC motor
	2	2	Significance of back emf in D.C. Motor.
	3	3	Voltage equation of D.C. Motor and condition for maximum power output(simple problems)
	4	4	Derive torque equation (solve problems)
	5	T4	Tutorial
	1	5	Characteristics of shunt, series and compound motors and their application
	2	6	Starting method of shunt, series and compound motors
	3	7	Speed control of D.C shunt motors by Flux control method. Armature voltage Control method. Solve problems
	4	8	Speed control of D.C shunt motors by Flux control method. Armature voltage Control method. Solve problems
	5	T5	Tutorial
	1	9	Speed control of D.C. series motors by Field Flux control method, Tapped field method and series-parallel method



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11 Determination of efficiency of D.C. Machine by Swinburne's Test method(solve numerical problems) 12 Determination of efficiency of D.C. Machine by Swinburne's Test method(solve numerical problems) 13 Losses, efficiency and power stages of D.C. motor(solve numerical problems) 14 Losses, efficiency and power stages of D.C. motor(solve numerical problems) 15 Uses of D.C. motors 16 Uses of D.C. motors 17 Uses of D.C. motors 18 SINGLE PHASE TRANSFORMER-20-Introduction, Defination Working principle of transformer 19 Constructional feature of Transformer 20 Arrangement of core & winding in different types of transformer. 31 Arrangement of core & winding in different types of transformer. 4 Brief ideas about transformer accessories such as conservator, tank, breather, and explosion vent etc. 4 Explain types of cooling methods 10 Explain types of cooling methods 11 In the fequation of transformer. 12 To travial 13 Ideal transformer voltage transformation ratio 2 Deparation of Transformer at no load, on load with phasor diagrams 10 Equivalent Resistance, Leakage Reactance and Impedance of transformer. 11 To draw phasor diagram of transformer on load, with winding Resistance and Magnetic leakage with using upf, leading pf and lagging pf load. 10 To draw phasor diagram of transformer on load, with winding Resistance and Magnetic leakage with using upf, leading pf and lagging pf load. 12 To draw phasor diagram of transformer on load, with winding Resistance and Magnetic leakage with using upf, leading pf and lagging pf load. 18 Regulation of transformer. Different types of losses in a Transformer. Regulation of transformer. Proper circuit and Short Circuit and solve numerical problems. 19 To draw phasor diagram of transformer types of losses in a Transformer. Explain Open circuit and Short Circuit test. (Solve numerical problems) 19 Explain Efficiency, efficiency at different loads and power factors, condition for maximum efficiency (solve problems)	2	10	Determination of efficiency of D.C. Machine by Brake test method(solve numerical
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19 Explain Efficiency, efficiency at different loads and power factors, condition for maximum efficiency (solve problems)	3	18	Explain Efficiency, efficiency at different loads and power factors, condition for
		19	Explain Efficiency, efficiency at different loads and power factors, condition for



GOVT. POLYTECHNIC KORAPUT DEPARTMENT OF ELECTRICAL ENGG.

13	1	100	DEEC I RICAL ENGG.
13	2	20	Explain All Day Efficient
	3	1	Explain All Day Efficiency (solve problems) Determination of load corresponding to Maximum efficiency. Parallel operation of single phase transformer.
	4	2	Parallel operation of load corresponding to Maximum efficiency
	5	3	Parallel operation of single phase transformer Parallel operation of single phase transformer
	3		Parallel operation of single phase transformer Tutorial Tutorial
-	1		4. AUTO TRANSFORM
13	-		4. AUTO TRANSFORMER-3- Constructional features of Auto transformer Working principle of single phase Auto Transformer
3	2		Working principle of single phase Auto Transformer Comparison of Auto transformer
	-		Copper). Comparison of Auto transformer with an two winding transformer (saving of
	3		Uses of Auto transf
			Uses of Auto transformer. 4.5. Explain Tap changer with transformer (on load and off load condition)
	4		Tutorial Tutorial
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15	1		Tutorial
15	2	-	Revision
	3		Revision
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	4		Revision
	5		Revision
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	4		Revision
	5	0	Revision

Signature of concerned faculty

H.O.D Electrical