

LESSON PLAN (SUMMER- 2022)

Subject- Energy Conversion-I

Semester- 4th

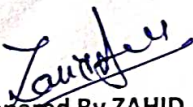
Branch- Electrical Engineering

NAME OF FACULTY-ZAHID AKHTAR


Sl. No.	Date	Chapter	Topic Name	No. of periods
1	14.02.2023-18.02.2023	D.C GENERATOR	1.1. Operating principle of generator	1
2			1.2. Constructional features of DC machine.1.2.1. Yoke, Pole & field winding, Armature, Commutator	1
3			1.2.2. Armature winding, back pitch, Front pitch, Resultant pitch and commutator- pitch	1
4			1.2.3. Simple Lap and wave winding, Dummy coils	1
5			cont....	1
6	20.02.2023-25.02.2023		1.3. Different types of D.C. machines (Shunt, Series and Compound)	1
7			1.4. Derivation of EMF equation of DC generators. (Solve problems)	1
8			Solve Numericals	1
9	27.02.2023-04.03.2023		1.5. Losses and efficiency of DC generator. Condition for maximum efficiency and numerical problems.	1
10			Solve Numericals	1
11	06.03.2023-11.03.2023		1.6. Armature reaction in D.C. machine	1
12			1.7. Commutation and methods of improving commutation.	1
13			cont....	1
14			1.7.1. Role of inter poles and compensating winding in commutation	1
15			1.8. Characteristics of D.C. Generators	1
16			1.9. Application of different types of D.C. Generators.	1
17	13.03.2023-18.03.2023		1.10. Concept of critical resistance and critical speed of DC shunt generator	1
18			1.11. Conditions of Build-up of emf of DC generator.	1
19			1.12. Parallel operation of D.C. Generators 1.13. Uses of D.C generators.	1
20	20.03.2023-25.03.2023		2.1. Basic working principle of DC motor	1
21			2.2. Significance of back emf in D.C. Motor.	1
22			2.3. Voltage equation of D.C. Motor and condition for maximum power output(simple problems)	1
23			Solve Numericals	1

24			2.4. Derive torque equation (solve problems)	1
25			2.5. Characteristics of shunt, series and compound motors and their application.	1
26			cont....	1
27	27.03.2023-01.04.2023	D. C. MOTORS	2.6. Starting method of shunt, series and compound motors.	1
28			cont....	1
29			2.7. Speed control of D.C shunt motors by Flux control method. Armature voltage Control method. Solve problems	1
30			2.8. Speed control of D.C. series motors by Field Flux control method, Tapped field method and series-parallel method	1
31			2.9. Determination of efficiency of D.C. Machine by Brake test method(solve numerical problems)	1
32	03.04.2023-08.04.2023		2.10. Determination of efficiency of D.C. Machine by Swinburne's Test method(solve numerical problems)	1
33			2.11. Losses, efficiency and power stages of D.C. motor(solve numerical problems)	1
34			Solve Numericals	1
35	10.04.2023-15.04.2023		2.12. Uses of D.C. motors	1
36			3.1 Working principle of transformer. 3.2 Constructional feature of Transformer.3.2.1 Arrangement of core & winding in different types of transformer.	1
37			3.2.2 Brief ideas about transformer accessories such as conservator, tank, breather, and explosion vent etc.	1
38			3.2.3 Explain types of cooling methods3.3 State the procedures for Care and maintenance.	1
39			3.4 EMF equation of transformer.	1
40	17.04.2023-22.04.2023		3.5 Ideal transformer voltage transformation ratio3.6 Operation of Transformer at no load, on load with phasor diagrams.	1
41			3.7 Equivalent Resistance, Leakage Reactance and Impedance of transformer.	1
42			3.8 To draw phasor diagram of transformer on load, with winding Resistance and Magnetic leakage with using upf, leading pf and lagging pf load.	1
43			3.9 To explain Equivalent circuit and solve numerical problems.	1
		SINGLE PHASE TRANSFORMER		

44	24.04.2023-29.04.2023		3.10 Approximate & exact voltage drop calculation of a Transformer.3.11 Regulation of transformer	1
45			3.12 Different types of losses in a Transformer. Explain Open circuit and Short Circuit test.(Solve numerical problems)	1
46			3.13 Explain Efficiency, efficiency at different loads and power factors, condition for maximum efficiency (solve problems)	1
47	01.05.2023-06.05.2023		Solve Numericals	1
48			3.14 Explain All Day Efficiency (solve problems)	1
49			Solve Numericals	1
50			3.15 Determination of load corresponding to Maximum efficiency.	1
51			3.16 Parallel operation of single phase transformer.	1
52	08.05.2023-13.05.2023	AUTO TRANSFORMER	Solve Numericals	1
53			4.1. Constructional features of Auto transformer.4.2. Working principle of single phase Auto Transformer.	1
54			4.3. Comparison of Auto transformer with an two winding transformer (saving of Copper).4.4. Uses of Auto transformer	1
55			4.5. Explain Tap changer with transformer (on load and off load condition)	1
56	15.05.2023-23.05.2023	INSTRUMENT TRANSFORMERS	5.1 Explain Current Transformer and Potential Transformer	1
57			5.2 Define Ratio error, Phase angle error, Burden.5.3 Uses of C.T. and P.T.	1
58			revision	1
59			revision	1


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