

## Lesson Plan

2024(S)

Subject :-EC-I (Code) TH-1 Name of faculty:-

Hare Krishna Sahoo

Semester :-4th Class allotted p/w

Branch :- Electrical engg

Discipline	Semester:-4th	From date:-16/01/24 To date:26/04/24	Teaching Aid
Subject:	No. of days/ per week p/w: 5	Theory/ Practical –Topics/Lesson	
Week	Date/Period		

1	16/01/24 – 20/01/24	1.1. Operating principle of generator 1.2. Constructional features of DC machine. 1.2.1. Yoke, Pole & field winding, Armature, Commutator. 1.2.2. Armature winding, back pitch, Front pitch, Resultant pitch and commutator- pitch	White board & marker
2	22/01/24 to 27/01/24	1.2.3. Simple Lap and wave winding, Dummy coils. 1.3. Different types of D.C. machines (Shunt, Series and Compound) 1.4. Derivation of EMF equation of DC generators. (Solve problems) 1.5. Losses and efficiency of DC generator. Condition for maximum efficiency and numerical problems	White board & marker
3	29/01/24 To 03/02/24	1.6. Armature reaction in D.C. machine 1.7. Commutation and methods of improving commutation. 1.7.1. Role of inter poles and compensating winding in commutation	White board & marker
4	5/2/24 To 10/2/24	1.8. Characteristics of D.C. Generators 1.9. Application of different types of D.C. Generators. 1.10. Concept of critical resistance and critical speed of DC shunt generator 1.11. Conditions of Build-up of emf of DC generator. 1.12. Parallel operation of D.C. Generators. 1.13. Uses of D.C generators.	White board & marker
5	12/2/24 To 17/02/24	D. C. MOTORS 2.1. Basic working principle of DC motor 2.2. Significance of back emf in D.C. Motor. 2.3. Voltage equation of D.C. Motor and condition for maximum power output (simple problems) 2.4. Derive torque equation (solve problems)	White board & marker
6	19/02/24 To 24/2/24	2.5. Characteristics of shunt, series and compound motors and their application. 2.6. Starting method of shunt, series and compound motors. 2.7. Speed control of D.C shunt motors by Flux control method. Armature voltage Control method. Solve problems	White board & marker
7	26/2/24 To 2/3/24	2.8. Speed control of D.C. series motors by Field Flux control method, Tapped field method and series-parallel method 2.9. Determination of efficiency of D.C. Machine by Brake test method (solve numerical problems)	White board & marker
8	4/3/24 To 9/3/24	2.10. Determination of efficiency of D.C. Machine by Swinburne's Test method (solve numerical problems) 2.11. Losses, efficiency and power stages of D.C. motor (solve numerical problems) 2.12. Uses of D.C. motors	White board & marker
9	11/3/24 To	SINGLE PHASE TRANSFORMER 3.1 Working principle of transformer. 3.2 Constructional feature of Transformer.	White board & marker



	16/3/24	3.2.1 Arrangement of core & winding in different types of transformer. 3.2.2 Brief ideas about transformer accessories such as conservator, tank, breather, and explosion vent etc. 3.2.3 Explain types of cooling methods 3.3 State the procedures for Care and maintenance.	
10	18/3/24 To 23/3/24	3.4 EMF equation of transformer. 3.5 Ideal transformer voltage transformation ratio 3.6 Operation of Transformer at no load, on load with phasor diagrams. 3.7 Equivalent Resistance, Leakage Reactance and Impedance of transformer. 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.	White board & marker
11	27/3/24 To 30/3/24	3.9 To explain Equivalent circuit and solve numerical problems. 3.10 Approximate & exact voltage drop calculation of a Transformer. 3.11 Regulation of transformer. 3.12 Different types of losses in a Transformer. Explain Open circuit and Short Circuit test. (Solve numerical problems)	White board & marker
12	2/4/24 To 6/4/24	3.13 Explain Efficiency, efficiency at different loads and power factors, condition for maximum efficiency (solve problems) 3.14 Explain All Day Efficiency (solve problems) 3.15 Determination of load corresponding to Maximum efficiency. 3.16 Parallel operation of single phase transformer	White board & marker & smart board
13	8/4/24 To 13/4/24	AUTO TRANSFORMER 4.1. Constructional features of Auto transformer. 4.2. Working principle of single phase Auto Transformer. 4.3. Comparison of Auto transformer with an two winding transformer (saving of Copper). 4.4. Uses of Auto transformer	White board & marker
14	15/4/24 To 20/4/24	INSTRUMENT TRANSFORMERS 1.1 Explain Current Transformer and Potential Transformer	White board & marker
15	22/4/24 To 26/4/24	1.2 Define Ratio error, Phase angle error, Burden. 1.3 Uses of C.T. and P.T.	White board & marker & smart board

Bikram Keshari Parida  
Signature of HOD

Harekrishna Sahu  
Signature of faculty