


Discipline: Electrical Engg.	Semester:3 rd (Session-2025-2026)	Name of the Teaching Faculty: N . C BEHERA , Sr. Lect. (Electrical)	STATUS
Subject: DCM & T	No.Of Days/Week Class Allotted = 3	Semester :From Date 14.07.2025 To Date: 15.11.2025 No. of Weeks: 15	
Week	Class Day	Theory Topics	
1 st	1 st	UNIT : 1 DC GENERATOR D.C. generator: construction, parts, materials and their functions	
	2 nd	Principle of operation of DC generator,	
	3 rd	Fleming's right hand rule,	
2 nd	1 st	Derive the emf equation of DC Generator	
	2 nd	Schematic diagrams of different types of DC generator,	
	3 rd	Armature reaction	
3 rd	1 st	Commutation,	
	2 nd	Applications of D.C. generators	
	3 rd	Questions answers and discussion	
4 th	1 st	UNIT: 2 D.C. Motors: D.C. motor: Types of DC motors, Fleming's left hand rule	
	2 nd	Principle of operation of DC Motor	
	3 rd	Back e.m.f. and its significance, Voltage equation of DC motor	
5 th	1 st	Torque and Speed; Armature torque, Shaft torque, BHP	
	2 nd	Brake test, losses, efficiency	
	3 rd	DC motor starters: Necessity, two point and three point starters	
6 th	1 st	Speed control of DC shunt and series motor: Flux and Armature control	
	2 nd	Brushless DC Motor: Construction and working	
	3 rd	Questions answers and discussion	
7 th	1 st	UNIT: 3 Single Phase Transformers Types of transformers: Shell type and core type, Construction: Parts and functions	
	2 nd	Materials used for different parts: CRGO, CRNGO, HRGO, amorphous cores,	
	3 rd	Transformer: Principle of operation	
8 th	1 st	EMF equation of transformer: Derivation, Voltage transformation ratio,	
	2 nd	Significance of transformer ratings	
	3 rd	Transformer No-load and on-load phasor diagram, Leakage reactance	
9 th	1 st	Equivalent circuit of transformer: Equivalent resistance and reactance	
	2 nd	Voltage regulation and Efficiency: Direct loading,	
	3 rd	OC/SC method	
10 th	1 st	All day efficiency Questions answers and discussion	
	2 nd	UNIT: 4 Three Phase Transformers Bank of three single phase transformers,(Y-Y,Δ-Δ,Δ-Y, Y- Δ),	
	3 rd	Single unit of three phase transformer	

11 th	1 st	Distribution and Power transformers: Construction,	
	2 nd	cooling	
	3 rd	Criteria for selection of distribution transformer, and power transformer.	
12 th	1 st	Need of parallel operation of three phase transformer Conditions for parallel operation.	
	2 nd	Polarity tests on mutually inductive coils and single phase transformers	
	3 rd	Polarity test, Phasing out test on Three-phase transformer	
13 th	1 st	Questions answers and discussion	
	2 nd	UNIT: 5 Special Purpose Transformers Single phase autotransformers: Construction,	
	3 rd	Three phase autotransformers: : Construction,	
14 th	1 st	Working,	
	2 nd	Applications.	
	3 rd	Isolation transformer: Constructional Features,	
15 th	1 st	Applications	
	2 nd	Questions answers and discussion	
	3 rd	REVISION	


 28.3.2024
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