

LESSON PLAN	
GP MAYURBHANJ	
AcademicYear:2025-2026	Name of the Faculty: RAJIB LOCHAN DASH
Course name: DC MACHINES AND TRANSFORMERS	CourseNo.:EEPC207
Branch: Electrical	Program: Diploma
Section:	Year/Sem:2nd/3rd

Sl. No.	Period	Time (min)	Teaching Method	Topic to be Covered	Unit
1.	1.	60 min	Black board	D.C. generator: construction, parts, materials and their functions	1
2.	2.	60 min	Black board	Principle of operation of DC generator	1
3.	3.	60 min	Black board	Fleming's right hand rule Derive the emf equation of DC Generator	1
4.	4.	60 min	Black board	Schematic diagrams of different types of DC generator	1
5.	5.	60 min	Black board	Armature reaction	1
6.	6.	60 min	Black board	Commutation	1
7.	7.	60 min	Black board	Applications of D.C. generators	1
8.	8.	60 min	Black board	D.C. motor: Types of DC motors	2
9.	9.	60 min	Black board	Fleming's left hand rule	2
10.	10.	60 min	Black board	Principle of operation of Back e.m.f and its significance	2
11.	11.	60 min	Black board	Voltage equation of DC motor	2
12.	12.	60 min	Black board	Torque and Speed; Armature torque, Shaft torque	2
13.	13.	60 min	Black board	BHP, Brake test, losses	2
14.	14.	60 min	Black board	Efficiency	2
15.	15.	60 min	Black board	DC motor starters: Necessity, two point and three point starters	2
16.	16.	60 min	Black board	Speed control of DC shunt and series motor: Flux and Armature control	2
17.	17.	60 min	Black board	Brushless DC Motor: Construction and working	2
18.	18.	60 min	Black board	Types of transformers: Shell type and core type	3
19.	19.	60 min	Black board	Construction: Parts and functions . Materials used for different parts: CRGO, CRNGO, HRGO, amorphous cores	3
20.	20.	60 min	Black board	Transformer: Principle of operation	3
21.	21.	60 min	Black board	EMF equation of transformer: Derivation, Voltage transformation ratio	3

22.	22.	60 min	Black board	Significance of transformer ratings	3
23.	23.	60 min	Black board	Transformer No-load and on-load phasor diagram, Leakage reactance	3
24.	24.	60 min	Black board	Equivalent circuit of transformer: Equivalent resistance and reactance	3
25.	25.	60 min	Black board	Voltage regulation and Efficiency: Direct loading	3
26.	26.	60 min	Black board	OC Test	3
27.	27.	60 min	Black board	SC Test	3
28.	28.	60 min	Black board	All day Efficiency	3
29.	29.	60 min	Projector	Bank of three single phase transformers,(Y-Y, Δ - Δ , Δ -Y, Y- Δ)	4
30.	30.	60 min	Projector	Single unit of three phase transformer	4
31.	31.	60 min	Projector	Distribution and Power transformers: Construction and cooling	4
32.	32.	60 min	Projector	Criteria for selection of distribution transformer, and power transformer	4
33.	33.	60 min	Projector	Need of parallel operation of three phase transformer	4
34.	34.	60 min	Projector	Conditions for parallel operation.	4
35.	35.	60 min	Projector	Polarity tests on mutually inductive coils and single phase transformers	4
36.	36.	60 min	Projector	Polarity test, Phasing out test on Three-phase transformer	4
37.	37.	60 min	Black board	Single phase autotransformer	5
38.	38.	60 min	Black board	Three phase autotransformer	5
39.	39.	60 min	Black board	Single phase autotransformer Construction, working and applications	5
40.	40.	60 min	Black board	Three phase autotransformer Construction, working and applications	5
41.	41.	60 min	Black board	Isolation transformer: Constructional Features and applications	5
42.	42.	60 min	Black board	Question discussion	
43.	43.	60 min	Black board	Revision	
44.	44.	60 min	Black board	Revision	
45.	45.	60 min	Black board	Revision	