

## **Name of the laboratory: ELECTRICAL MACHINES LAB – I**

### **Objectives of the lab:**

- To expose the students to the operation of DC Generator
- To expose the students to the operation of DC Motor.
- To examine the self-excitation in DC generators.

### **List of experiments:**

1. Magnetization characteristics of DC shunt generator (Determination of critical field resistance and critical speed)
2. Load test on DC shunt generator (Determination of characteristics)
3. Load test on DC series generator (Determination of characteristics)
4. Load test on DC compound generator (Determination of characteristics.
5. Hopkinson's test on DC shunt machines (Predetermination of efficiency)
6. Fields test on DC series machines (Determination of efficiency)
7. Swinburne's test and speed control of DC shunt motor (Predetermination of efficiencies)
8. Brake test on DC compound motor (Determination of performance curves)
9. Brake test on DC shunt motor (Determination of performance curves)
10. Retardation test on DC shunt motor (Determination of losses at rated speed)
11. Separation of losses in DC shunt motor.

**LIST OF EQUIPMENT**

<b>S.NO</b>	<b>DESCRIPTION</b>
1	WATTMETER L.P.F
2	RECTIFIER
3	RHEOSTARTS(DOUBLE) 500 $\Omega$ /2A
4	RHEOSTARTS(SINGLE) 370 $\Omega$ /1.7 A
5	AUTO TRANSFORMER
6	AUTO TRANSFORMER 3 - PHASE
	AUTO TRANSFORMER 1-PHASE 15 A
	AUTO TRANSFORMER 1-PHASE
7	TACHOMETER
	D.C DHUNT GENERATOR
	BRAKE TEST ON D.C SHUNT MOTOR
8	ACCESSORIES
	ACCESSORIES
	O.C& S.C TEST
9	BRAKE TEST ON 3PHASE INDUCTION MOTOR
12	REGULATION OF 3MPHASE ALTERNATOR
13	ACCESSORIES
14	ACCESSORIES
15	PANEL BOX WITH POWDER COATED
16	MOVING IRON VOLTMETER
17	MOVING IRON VOLTMETER 0-300/600 V
18	MOVING IRON AMMETERS 5/10A
19	MOVING COIL VOLTMETERS 25/50 V
20	MOVING COIL VOLTMETERS 150/300V
21	MOVING COIL AMMETERS 1/2 A
22	MOVING COIL AMMETERS 10/20A
23	MOVING COIL AMMETERS 15/30 A
24	LOAD TEST ON D.C SHUNT GENERATOR

25	ACCESSORIES
26	LOAD TEST ON D.C SHUNT MOTOR
27	D.C 3 POINT STARTER
28	LOAD TEST ON D.C COMPOUND GENERATOR
29	D.C 3 POINT STARTER
30	HOPKINS TEST
31	D.C 3 POINT STARTER
32	D.C SERIES MACHINE FIELD TEST
33	D.C 3 POINT STARTER
34	BRAKE TEST ON D.C COMPOUND MOTOR
35	D.C 3 POINT STARTER
36	SEPERATION OF LOSSES
37	D.C 3 POINT STARTER
38	RESSITIVE LAOD1-PHASE
39	TACHOMETERS DIGITAL
40	PANEL BOPARD TERMINALS 25AMPS
41	D.P.S.T SWITCH
42	S.P.S.T SWITCH
43	RHEOSTARTS 500 $\Omega$ /2 A
44	RHEOSTARTS 500 $\Omega$ /1 A
45	RHEOSTARTS 50 $\Omega$ /5 A
46	RHEOSTARTS 370 $\Omega$ /1.7 A
47	BACKLITE
48	M.C VOLTMETERS PORTABLE 0-150/300V
49	M.C AMMETERS PORTABLE 10/20A
50	M.C AMMETERS PORTABLE 1/2A
51	SUMPNERS TEST SETUP
52	SCOOT CONNECTION TEST SETUP
53	NO LOPAD BLOKED ROTOR TEST
54	1-PASE INDUCTION MACHINE
55	V ^ CURVES ON 3-PHASE SYNCHRONOUS MACHINE
56	EQUIVALENT CIRCUIT OF 1-PHASE INDUCTION MAOTOR
57	XD AND XQ OF SALINET POLE MACHINE
58	ACCESSORIES
59	PARREL OPERATION OF 1-PAHSE TRANSFORMERS
61	R-L 3-PHASE LOAD 10A
62	3-PHASE INDUCTIVE LOAD
63	3-PHASE CAPACTIVE LOAD
64	MULTIMETERS

65	RHEOSTATS 25Ω /10A
66	RHEOSTATS 100Ω /2.5A
67	BOOSTER TRANSFORMER 230V/0-50V @15A

