Electrical Machines-I Lab

Objective:

- To plot the magnetizing characteristics of DC shunt generator and understand the mechanism of self-excitation.
- To control the speed of the DC motors.
- Determine and predetermine the performance of DC machines.
- To predetermine the efficiency and regulation of transformers and assess their performance.

Sections Handled: II/II

Major Equipment Details:

Sl.No	Equipment Name	Qty
1	DC Shunt generator set	2
2	DC Shunt Motor	2
3	Shunt Identical Machines	1
4	Compound generator coupled with Shunt motor	1
5	Series generator coupled to DC Shunt motor	1
6	Two DC Identical series Machines	1
7	Three Phase rectifier	1
8	Different ranges of Rheostats	23
9	Different ranges of single phase resistive loads	9
10	Different ranges of Voltmeters (MC)	26
11	Different ranges of Ammeters(MC)	34
12	Tacho meters	12
13	Different ranges of Ammeters(M1)	39
14	Different ranges of wattmeter's (LPF,UPF)	36
15	Single phase auto transformers	12
16	Three phase auto transformers	2
17	Tacho meters	06

Faculty In charge with qualification: **B. Santosh Kumar M.Tech (Ph.D)**
Lab Technical name with qualification: **S. Santhosh Kumar, Diplamo**
Experiment list as per curriculum:

1. Magnetization characteristics of DC shunt generator. Determination of critical field resistance and critical speed.
2. Brake test on DC shunt motor. Determination of performance curves.
3. Hopkinson's test on DC shunt machines. Predetermination of efficiency.
4. Swinburne's test and Predetermination of efficiencies as Generator and Motor.
5. Speed control of DC shunt motor by Field and armature Control.
6. O.C. & S.C. tests on Single Phase Transformer
7. Sumpner's test on Single Phase Transformers
8. Scott connection of Transformers
9. . Parallel operation of Single Phase Transformers
10. Separation of core losses of a single phase transformer

Experiment list beyond the curriculum

1. Break test on DC Compound Motor
2. Load test on series Generator.