OPEN CIRCUIT CHARACTERISTICS CIRCUIT DIAGRAM

EXPT : 2

OPEN CIRCUIT AND LOAD CHARACTERISTICS OF DC SHUNT GENERATOR

AIM:

To draw the open circuit and load characteristics of DC shunt generator.

APPARATUS REQUIRED:

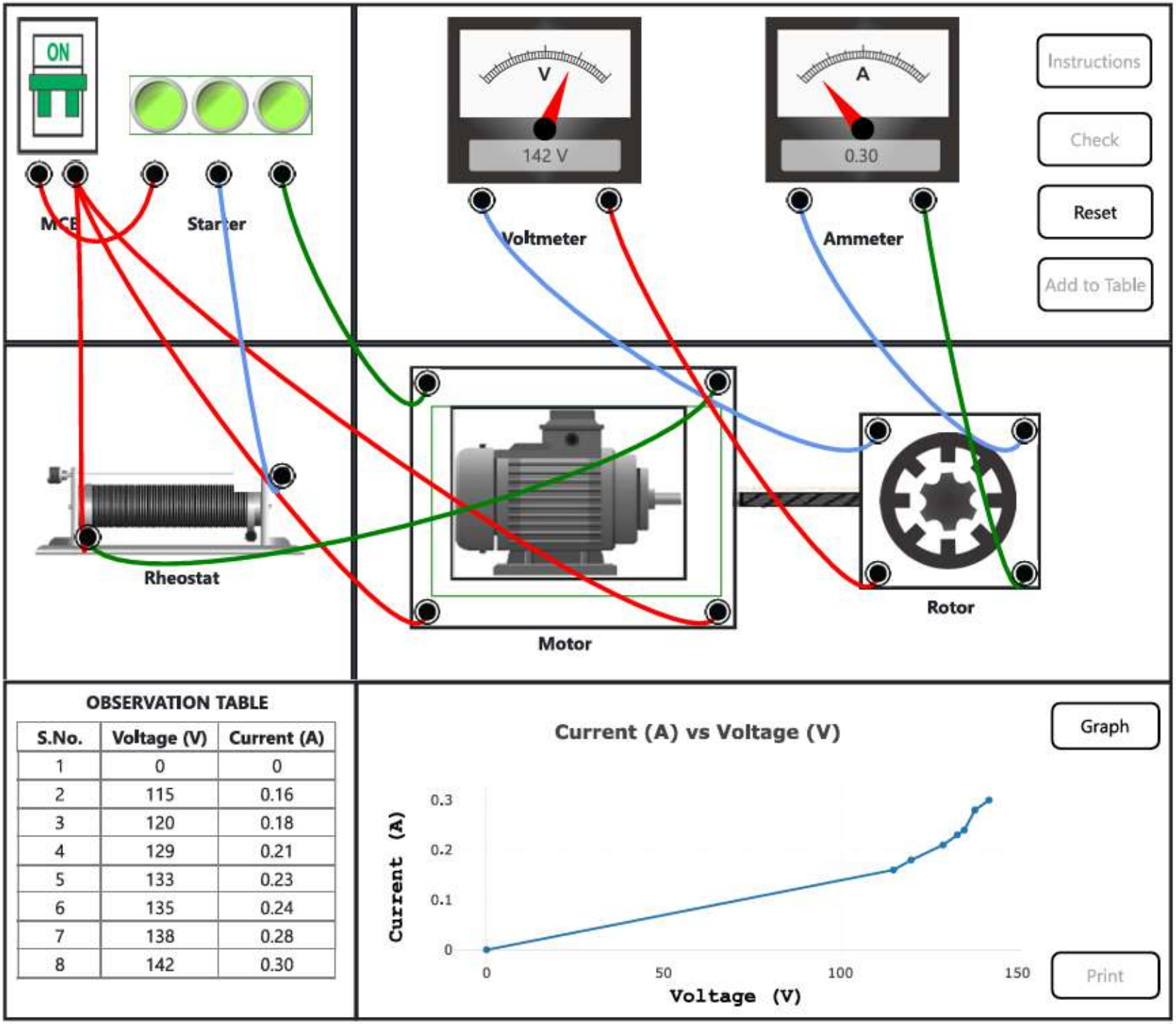
Laptop with internet connection

THEORY:

DC generator converts mechanical energy to electrical energy. DC generator works in the principle of Faraday's law. It states that "When a conductor cuts the magnetic flux and emf is induced." The field windings and armature windings are connected in parallel in the shunt generator.

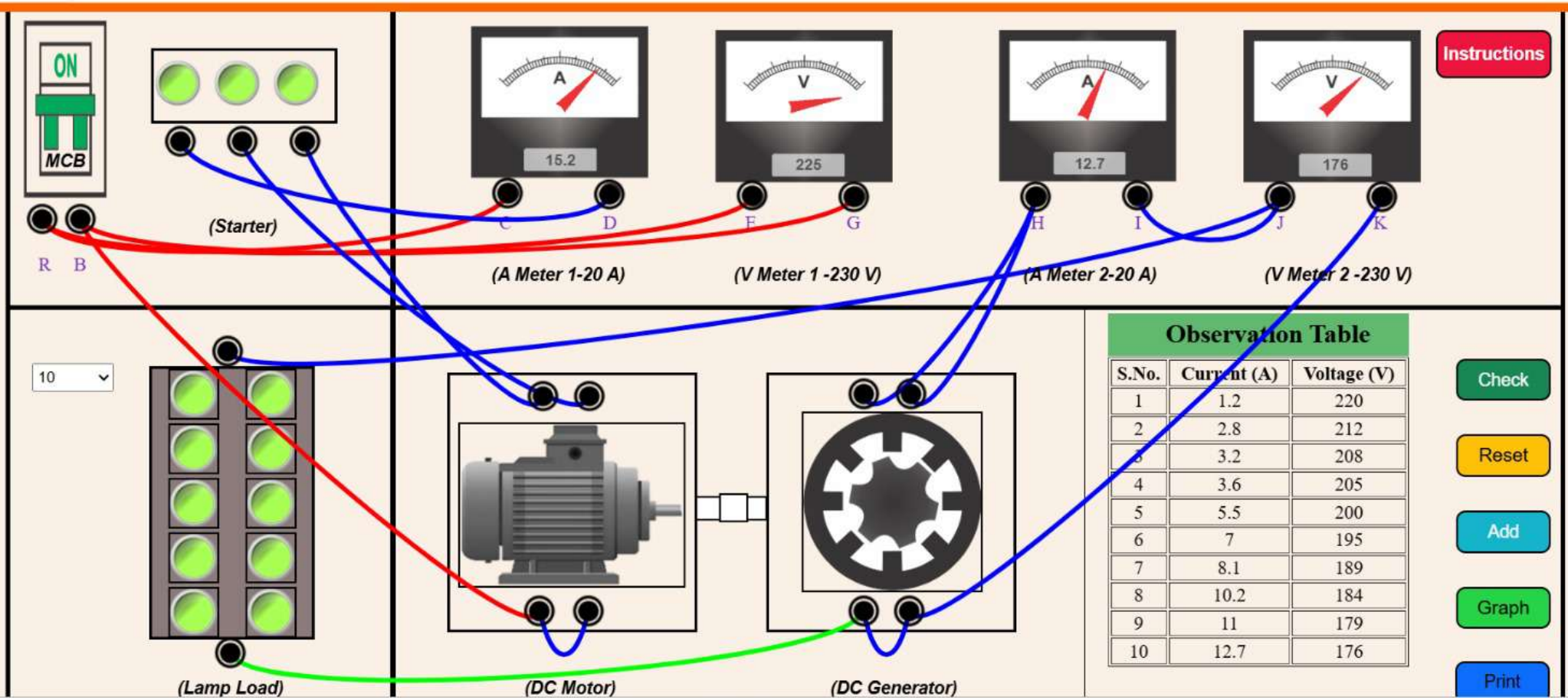
OPEN CIRCUIT CHARACTERISTICS

It is also known as magnetisation characteristics or no load characteristics graph drawn between open circuit voltage (E_0) and field current (I_F).



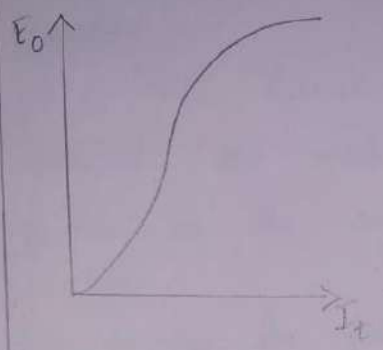
OBSERVATION TABLE

S.No.	Voltage (V)	Current (A)
1	0	0
2	115	0.16
3	120	0.18
4	129	0.21
5	133	0.23
6	135	0.24
7	138	0.28
8	142	0.30

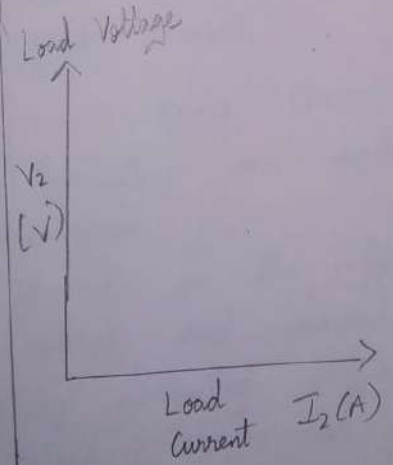

ON
MCB
R
B
(Starter)
A
15.2
C
D
(A Meter 1-20 A)
V
225
E
F
G
(V Meter 1 -230 V)
A
12.7
H
I
(A Meter 2-20 A)
V
176
J
K
(V Meter 2 -230 V)
Instructions
10
(Lamp Load)
(DC Motor)
(DC Generator)
Observation Table
S.No. | Current (A) | Voltage (V)
1 | 1.2 | 220
2 | 2.8 | 212
3 | 3.2 | 208
4 | 3.6 | 205
5 | 5.5 | 200
6 | 7 | 195
7 | 8.1 | 189
8 | 10.2 | 184
9 | 11 | 179
10 | 12.7 | 176
Check
Reset
Add
Graph
Print

Open Circuit characteristics

Model Graph

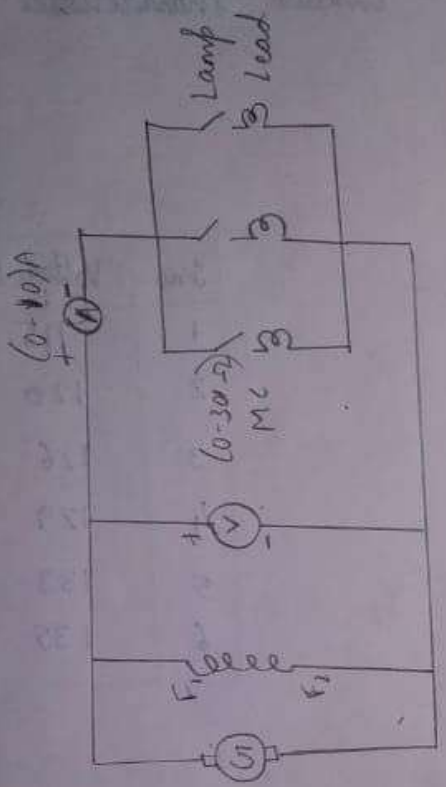


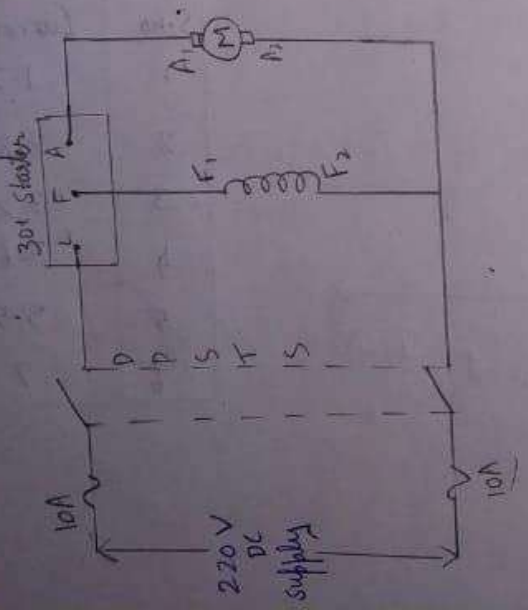
S.no	Voltage (v)	Current (A)
1	115	0.16
2	120	0.18
3	126	0.20
4	129	0.21
5	133	0.23
6	135	0.24



S.no	Current (A)	Voltage (v)
1	1.2	220
2	2.8	212
3	3.2	208
4	3.6	205
5	5.5	200
6	7	195

LOAD CHARACTERISTICS





LOAD CHARACTERISTICS:

It is the graph drawn between load voltage (V_2) and load current (I_2). It is also known as external characteristics.

PROCEDURE:

OPEN CIRCUIT CHARACTERISTICS

1. Connections are made as per the circuit diagram
2. Switch on the supply and note down the readings.
3. By varying the field rheostat different values of open circuit voltage and field current are noted.
4. Plot the graph between open circuit voltage and field current.

LOAD CHARACTERISTICS

1. Connections are made as per the circuit diagram.
2. Switch on the supply and note the no load voltage and current.
3. By connecting different loads, different values of load voltages and load current are noted.
4. Plot the graph between load voltage and load current.

RESULT:

Thus, the open circuit and load characteri
of DC shunt generator are verified successfully.