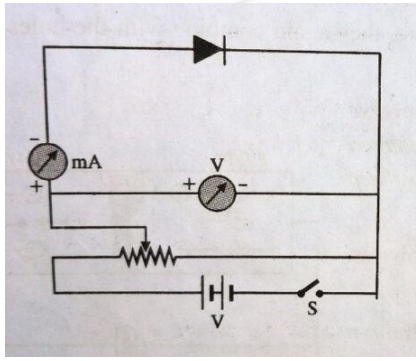
Experiment 1



Objective:

Study of Forward Characteristics of Silicon diode.

Equipments Needed:

1. Patch cords

Circuit Diagram :

Circuit used to plot Forward Characteristics of Si diode is shown in figure 27.

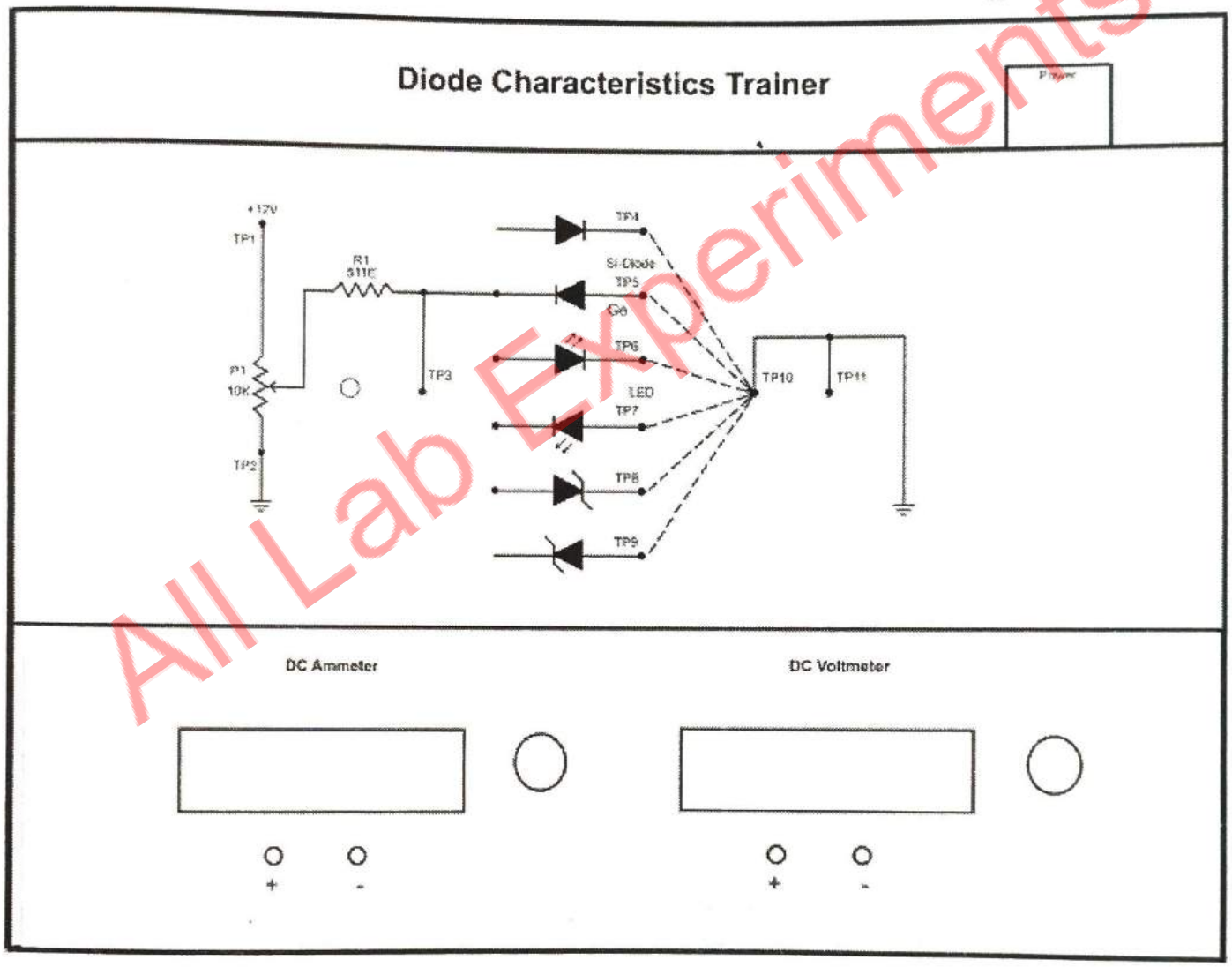


Figure 27

Procedure:

1. Before switch 'On' the supply rotate potentiometer P_1 fully in CCW (counter clockwise direction).

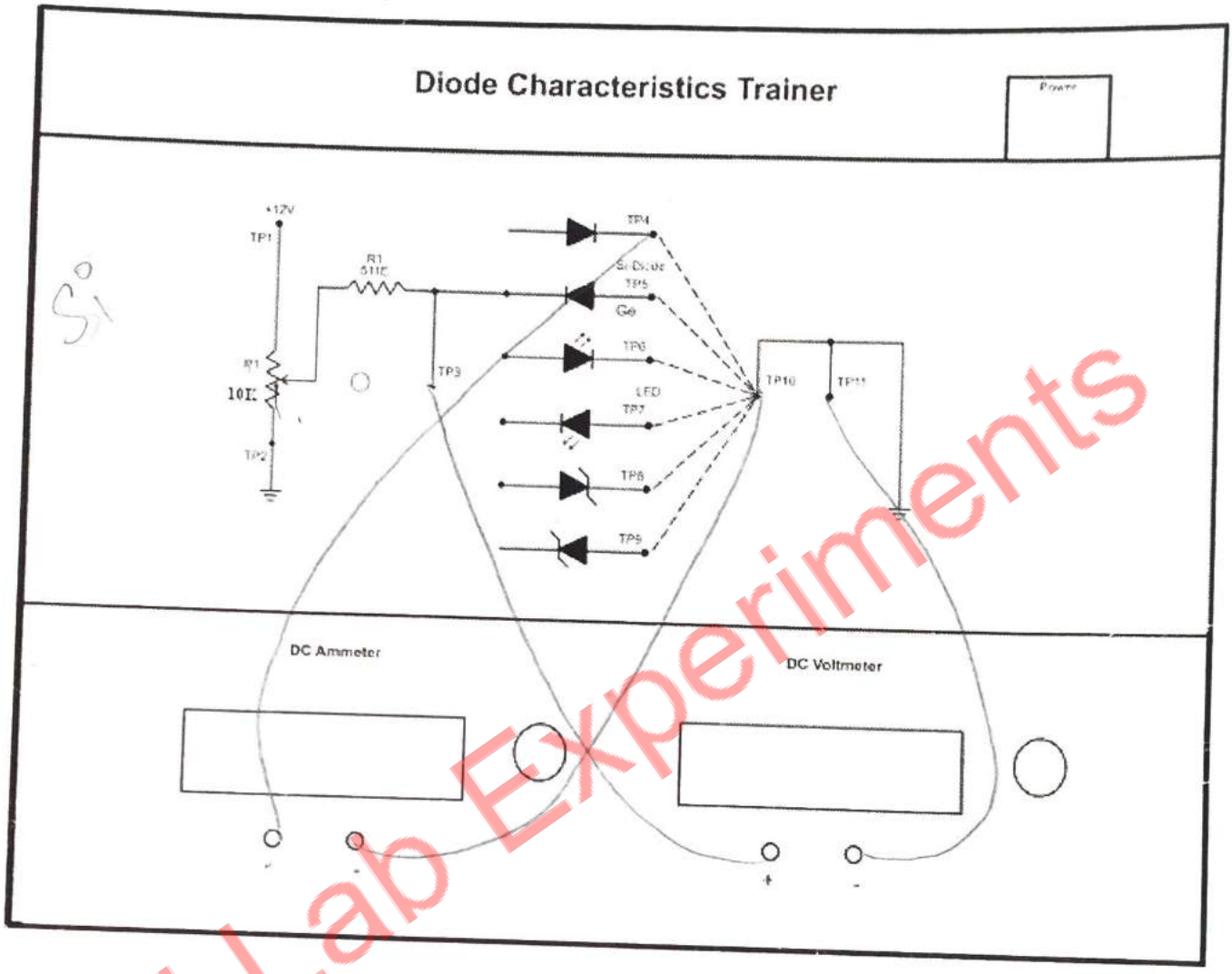


Figure 28

2. Connect Ammeter between TP4 and TP10, to measure diode current I_D (mA) & set Ammeter at 200mA range.
3. Connect Voltmeter across TP3 and TP11, to measure diode voltage V_D & set Voltmeter at 20V range.
4. Switch 'On' the power supply.
5. Vary the potentiometer P_1 so as to increase the value of diode voltage V_D from 0 to 1V (0.83V) in steps and measure the corresponding values of diode current I_D in mA and note down in the Observation Table 1.
6. Plot a curve between diode voltage V_D and diode current i_D as shown in figure 3 (First quadrant) using suitable scale, with the help of Observation Table 1. This curve is the required forward characteristics of Si diode.
7. Switch 'Off' the supply.

Repeat this for reverse bias diode characteristics and later for LED and Zener diode.

3

Observation Table 1:

S. no.	Diode Voltage (V_D)	Diode current I_D (mA)
1.	0.0V	
2.	0.1V	
3.	0.2V	
4.	0.3V	
5.	0.4V	
6.	0.5V	
7.	0.6V	
8.	0.7V	
9.	0.8V	
10.	0.9V	
11.	1.0V	

Experiment 2

Objective:
Study of Reverse Characteristics of Germanium Diode.

Equipments Needed:

2. Patch cords

Circuit Diagram:

Circuit used to plot Reverse characteristics of Ge diode is shown in figure 29.

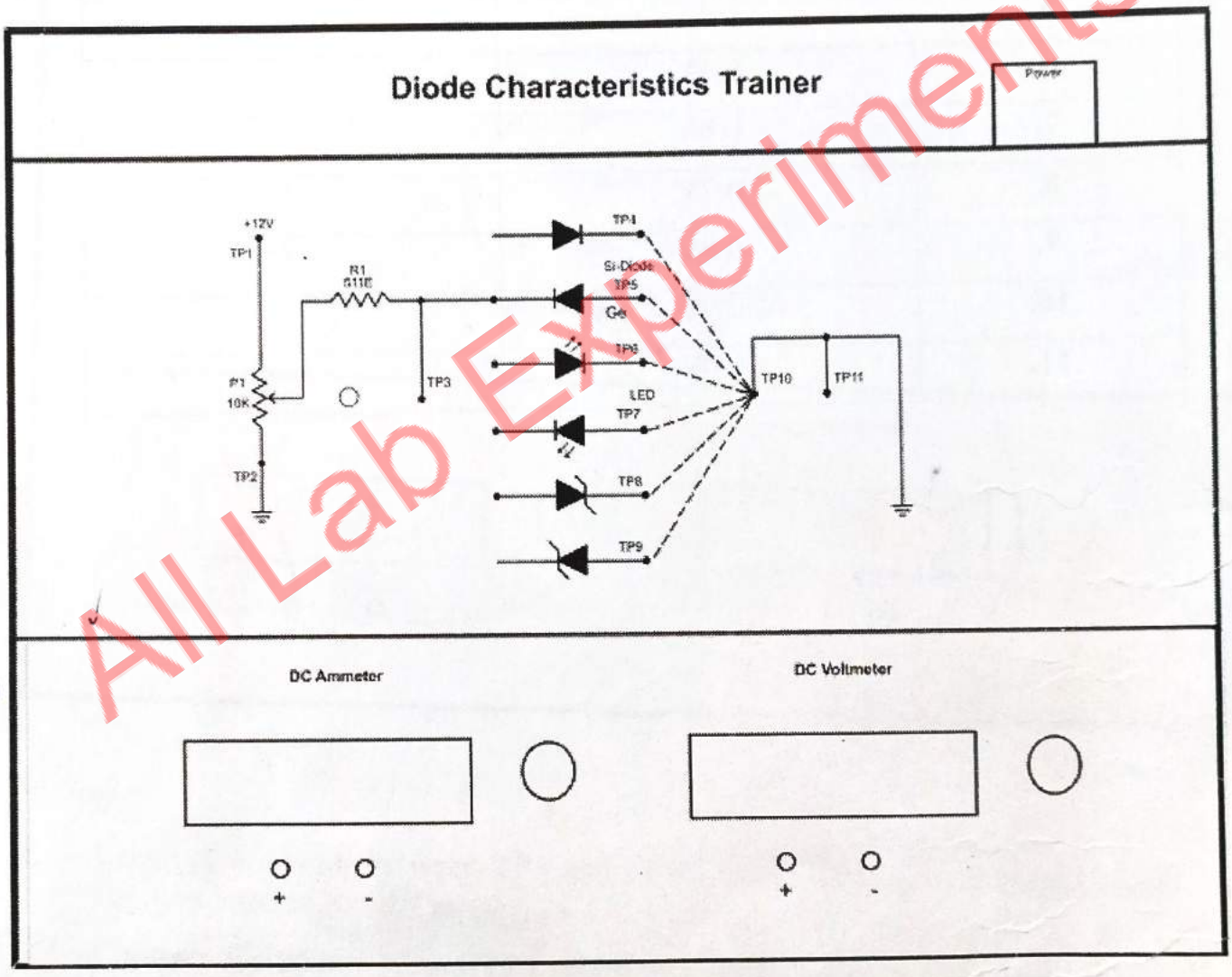


Figure 29

Procedure:

1. Before switch 'On' the supply rotate potentiometer P_1 fully in CCW (counter clockwise direction).

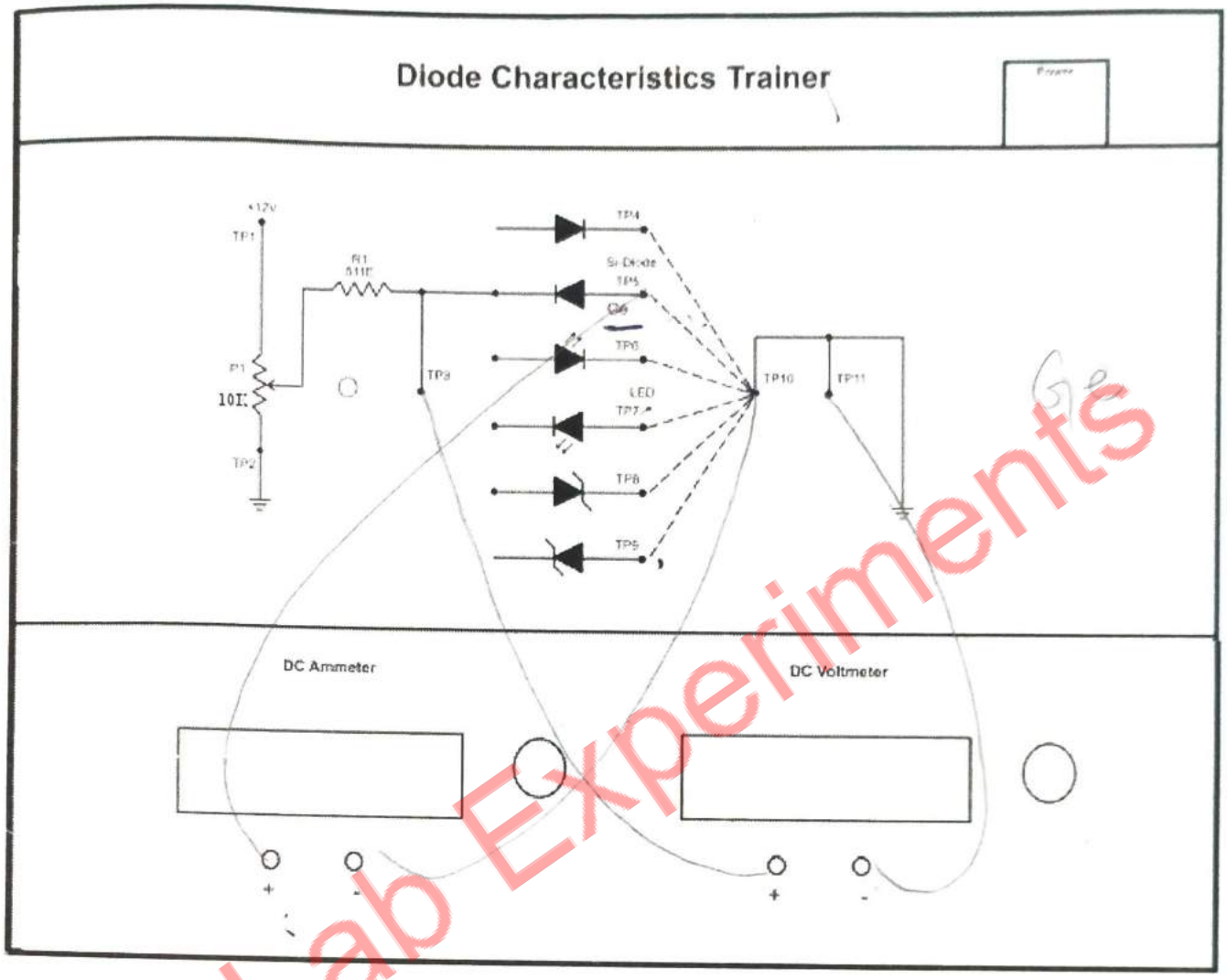


Figure 30

2. Connect Ammeter between TP5 and TP10, to measure diode current I_D (μA) & set Ammeter at 200μA range.
3. Connect Voltmeter across TP3 and TP11, to measure diode voltage V_D & set Voltmeter at 20V range.
4. Switch 'On' the power supply.
5. Vary the potentiometer P_1 so as to increase the value of diode voltage V_D from 0 to maximum in steps and measure the corresponding values of diode current I_D in μA and note down in the Observation Table 2.
6. Plot a curve between diode voltage V_D and diode current I_D as shown in figure 3 (third quadrant) using suitable scale with the help of Observation Table 2. This curve is the required reverse characteristics of Ge diode.
7. Switch 'Off' the supply.

Observation Table 2:

S. no.	Diode Voltage (V_D)	Diode current I_D (μA)
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		