

### Lab 3 Zener Diodes

1. Use the diode checker in the voltmeter and measure Zener voltage in forward bias:  $V_Z = \underline{\hspace{2cm}}$
2. Assemble the circuit in Fig. 1:

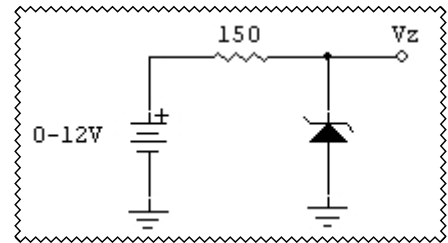


Fig. 1

3. Slowly increase the power supply voltage as in Table 2 and complete the measurements:

$V_{CC}$	$V_Z$	$I_Z$
0		
4		
6		
8		
10		
12		

4. Based on the values in Table 1, graph the Zener diode characteristics in Fig. 2: (Label the axes with the appropriate values.)

5. Explain the value of the output voltage when the Zener diode is reversed.

Table 1

6. Calculate Zener resistance at 8V:

$$R_Z = \underline{\hspace{2cm}}$$

Calculated Zener resistance at 12V:

$$R_Z = \underline{\hspace{2cm}}$$

6. What happens to Zener current as the voltage is increased. What must be happening to the resistance of the Zener?

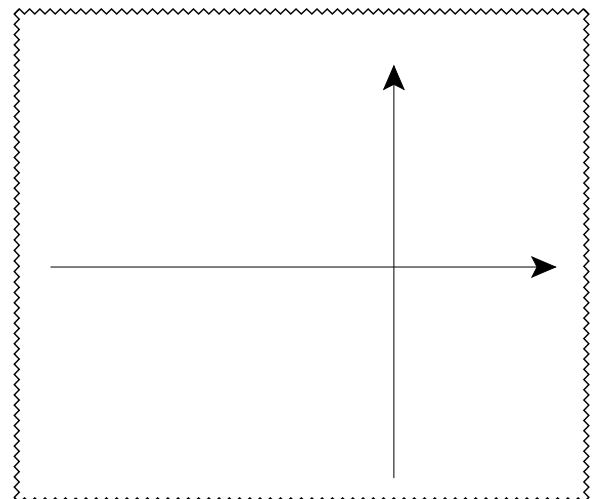


Fig.2