V/I DIODE CHARACTERISTICS

Objective:

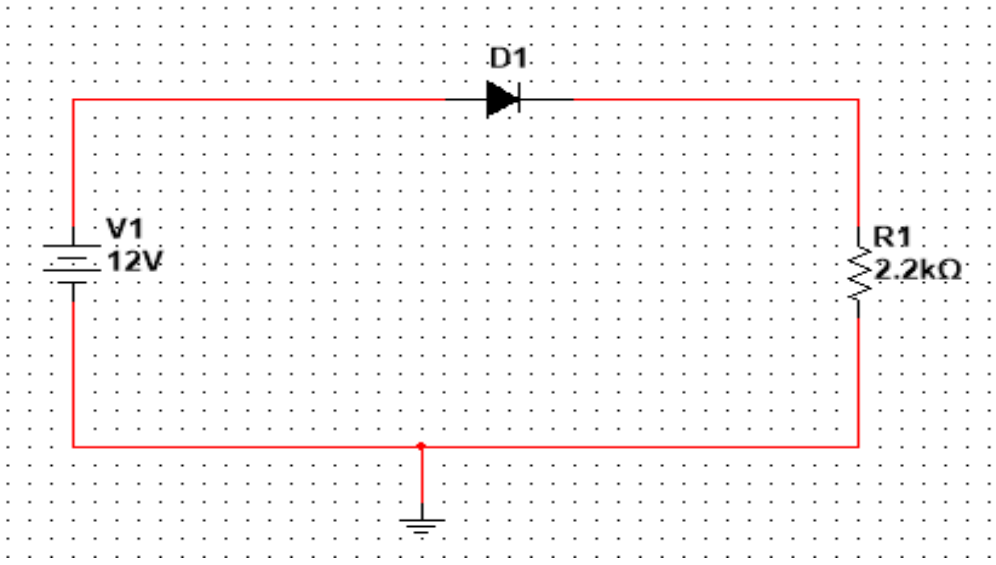
- To calculate, draw, and measure the characteristics voltage and current of the diode.

Tools and Equipment's Required

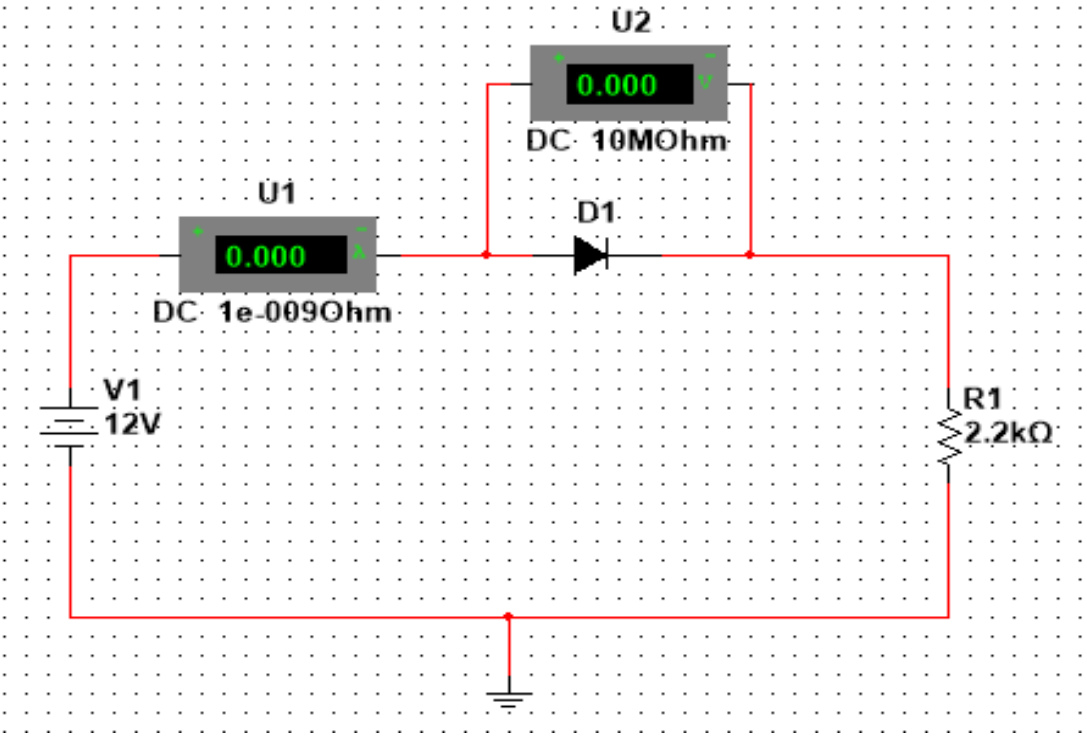
- ✓ DC Power Supply
- ✓ Virtual Diode
- ✓ Resistance 2.2 kΩ
- ✓ Voltmeter
- ✓ Ammeter

➢ PART 1 :**Forward bias diode**

- Construct the circuit that shown in Fig. below by using the material as follow:



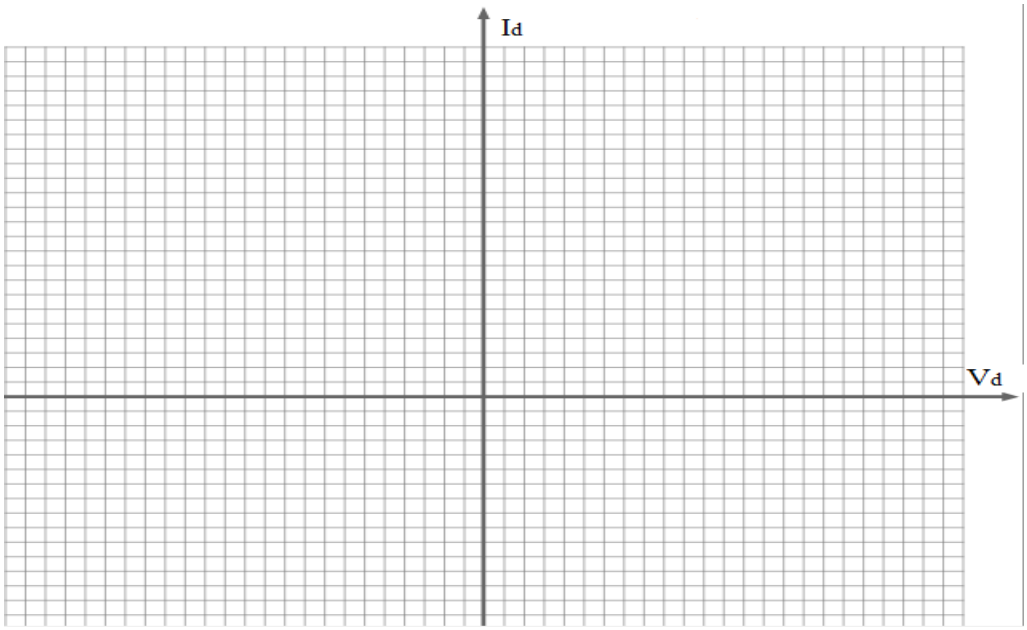
- Connect the Ammeter in series with the diode to measure the **current diode**, and the Voltmeter in parallel with diode to measure the **voltage diode** as Fig. below.



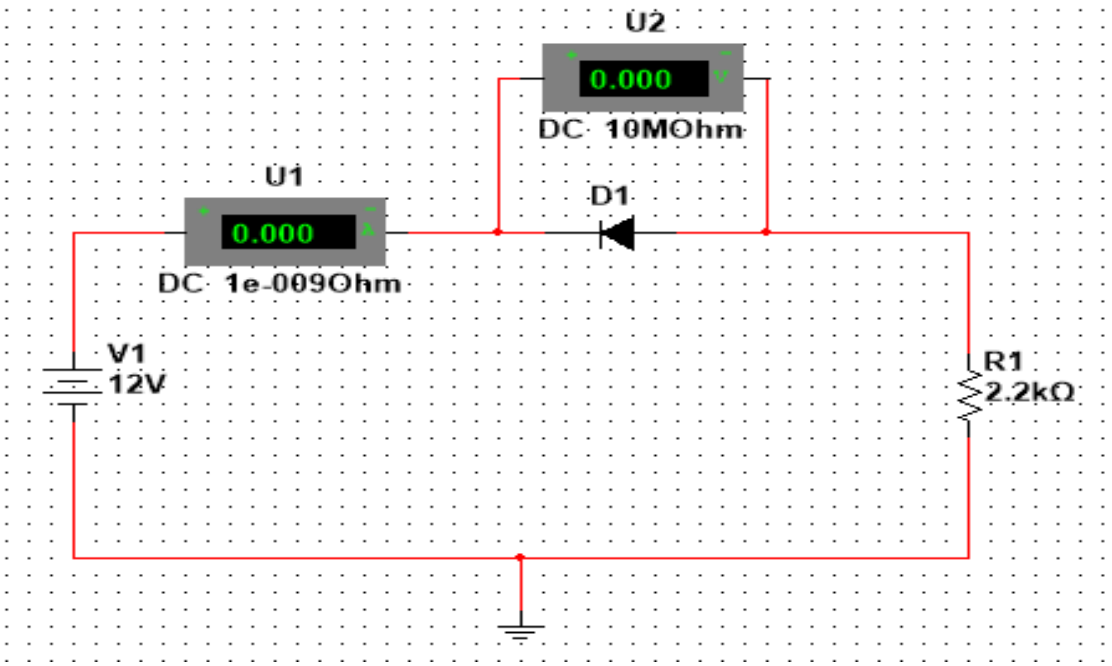
- Change the value of DC supply from 0 to 12V increasing according to the table below and then determine the value of the **Voltage Diode** and **current Diode**.

V1(V)	VD (V)	ID (mA)
0		
0.5		
0.7		
2		
5		
10		
12		

- plot ID versus VD for the diode. Label each curve and clearly indicate data points.



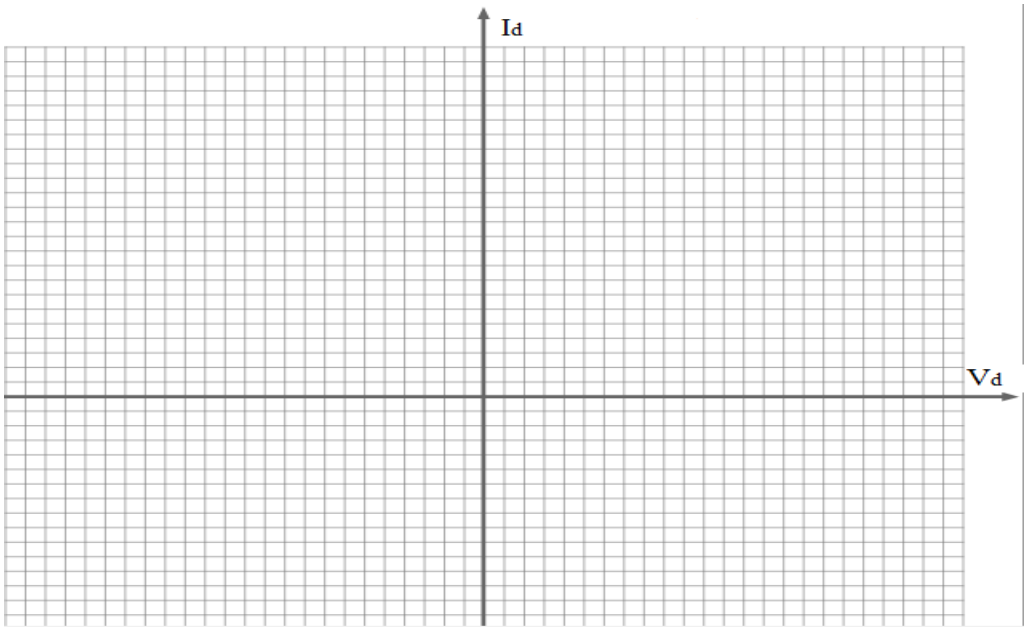
➢ PART 2 :Rev**ersed bias diode**



- Change the value of DC supply from 0 to -1000 V increasing according to the table below and then determine the value of the **Voltage Diode** and **Current Diode**.

V1(V)	VD (V)	ID (mA)
0		
-1		
-5		
-12		
-24		
-100		
-1000		

- plot ID versus VD for the diode. Label each curve and clearly indicate data points.



Discussion:

1) what are the difference of two circuit (Forward and Reverse bias) and what happen if we run the circuit?
2) What is the name of current in reverse bias circuit?
3) Explain at which voltage value in the reverse bias circuit the diode passes high negative current? And what is the name of this voltage and the region where the Voltage applied.