



اسم المادة: الكترونك  
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المرحلة: الثانية  
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رقم التجربة: 3  
عنوان التجربة: Half Wave Rectifier



## **Objective: -**

To calculate and draw the DC output voltages of half- wave rectifiers.

## **Circuit elements:**

AC power

Diode

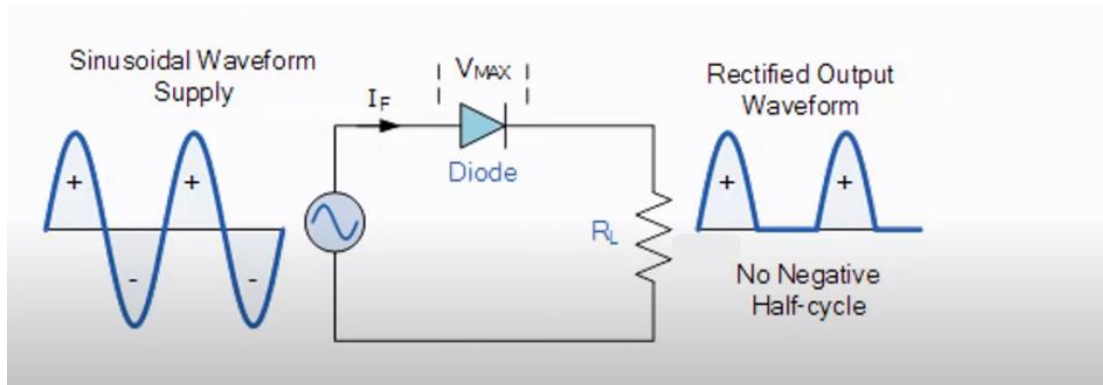
Resistor

Oscilloscope

## **Theory**

Half Wave Rectifier:

A diode is a unidirectional conduction device. It conducts only when its anode is at a higher voltage with respect to its cathode. In a half wave rectifier circuit, during positive half-cycle of the input, the diode gets forward biased and it conducts. Current flows through the load resistor  $R_L$  and voltage is developed across it. During negative half-cycle of the input, the diode gets reverse biased. Now no current (except the leakage current which is very small) flow. The voltage across the load resistance during this period of input cycle is zero. Thus, a pure ac signal is converted into a unidirectional signal.



## Procedure:

- 1- Connect the electrical circuit according to the figure 1
- 2- Then connect the circuit with an oscilloscope to see which signal is entering and leaving the circuit

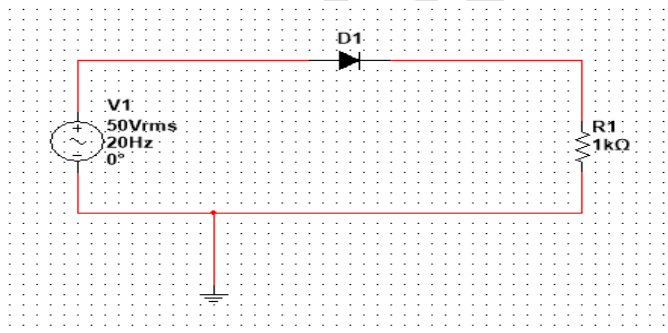


figure 1

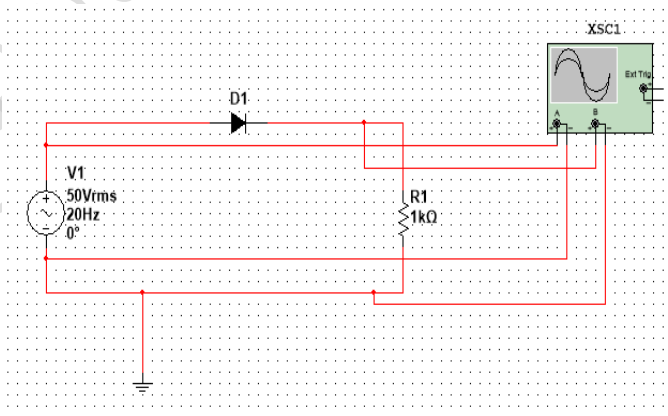


figure 2