

رقم التجربة:- (٣)

اسم التجربة:- Clamper Circuit Diode

الغرض من التجربة :-

1. To know the connection of the clamper circuits, and to know the response of each circuit on the Oscilloscope.
2. To know the application of each circuit.
3. To Show how the output voltage has change when compared to the input voltage waveforms.

الأجهزة والمعدات:-

1. Function generator.
2. 15k ohm resistor.
3. 1N4001 silicon rectifier diode.
4. Oscilloscope.
5. DC power supply

المناقشة والاستنتاجات:-

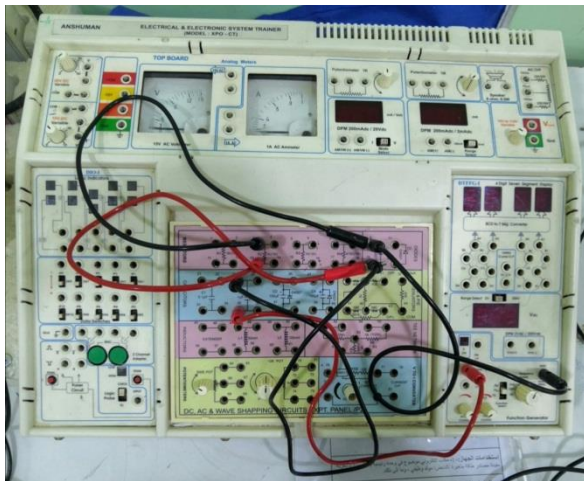
المناقشة :

1. Why the capacitor is used in the clamper circuits?
2. Give some uses of the clamper circuits.
3. Compare between the clipper and the clamper circuits.

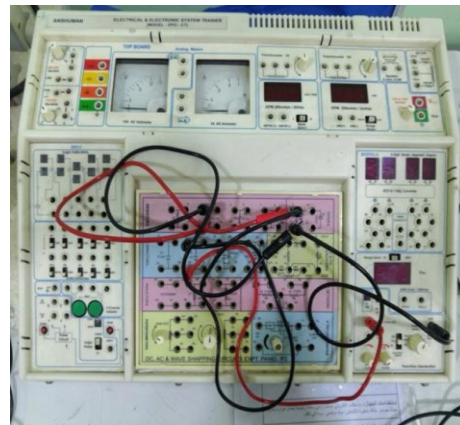
الاستنتاج :

In some practical situations we might need to make wave-shaping to the AC input signal by adding a DC level to the input waveform, this special type of wave shaping circuits is called the diode clampers. This type of wave-shaping circuits doesn't change the input signal shape. In this experiment, we are going to construct these circuits and to watch its output signal practically. Clamping

means that there is a part of the circuit will clip out and added to the other part. This process uses the capacitor to generate these circuits. There is one condition for this circuit that the time constant of the capacitor charging and discharging must be the period time of the wave by 5 ( $5RC > T$ ). There are two types of the clamper circuits: the positive clamper and the negative clamper.



**Positive Clamper Circuit**



**Negative Clamper Circuit**