

## Experiment no.4

### § Full Wave bridge Rectifier §

#### 4.1 Objective:

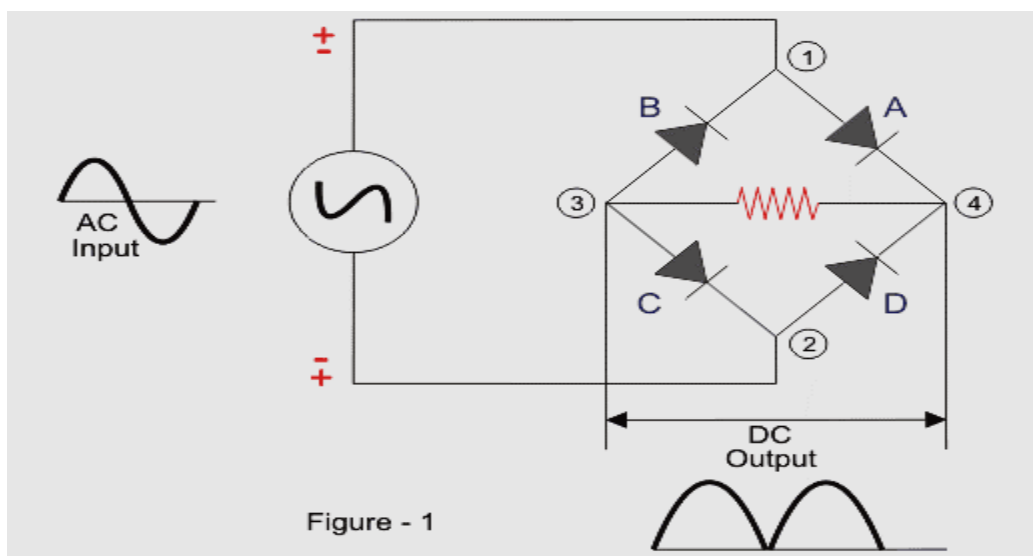
- To convert AC to DC.
- To be familiar with the full wave rectifier.

#### 4.2 Theory:

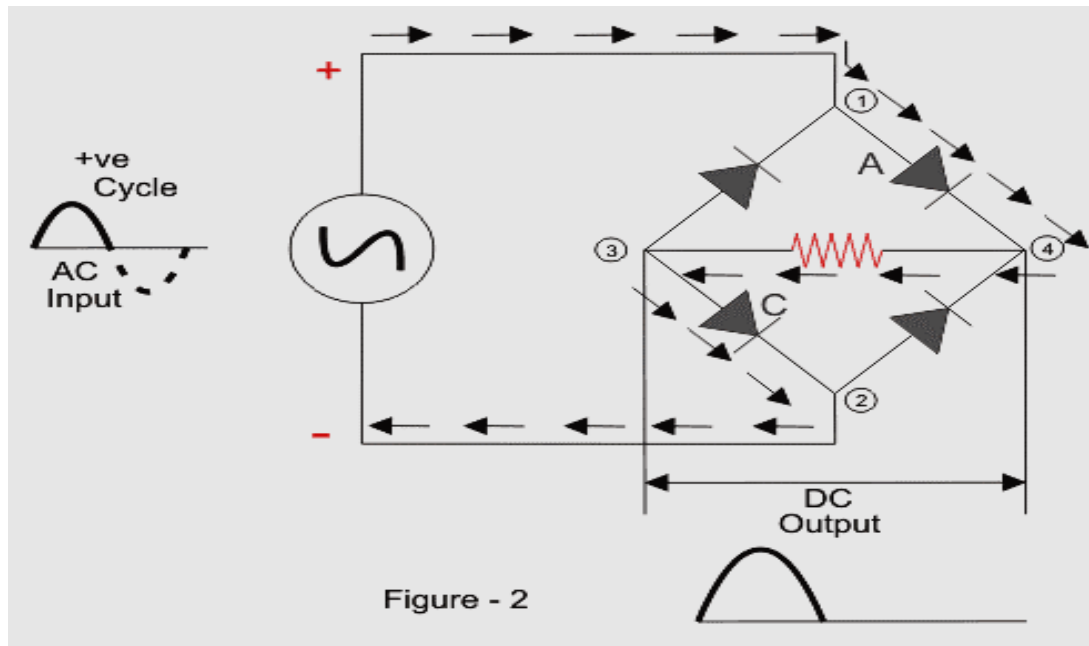
A full wave bridge rectifier is a type of rectifier, which will use four diodes or more than that in a bridge formation. A full wave bridge rectifier system consists of:

1. Four Diodes
2. Resistive Load

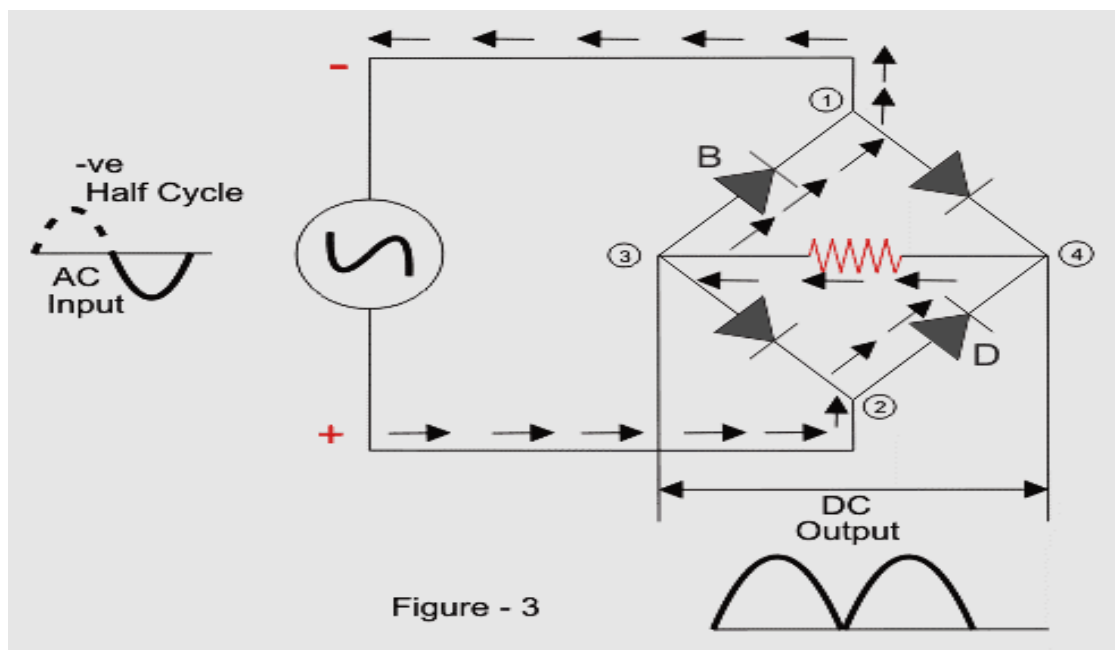
We use the diodes namely A, B, C and D, which form a bridge circuit. The circuit diagram is as follows



## Principle of Full Wave Bridge Rectifier



We apply an AC across the bridge. During the positive half-cycle, the terminal 1 becomes positive, and terminal 2 becomes negative. This will cause the diodes A and C to become forward-biased, and the current will flow through it. Meanwhile diodes B and D will become reverse-biased and block current through them. The current will flow from 1 to 4 to 3 to 2.



During the negative half-cycle, the terminal 1 will become negative, and terminal 2 will become positive. This will cause the diodes B and D to become forward-biased and will allow current through them. At the same time, diodes A and C will be reverse-biased and will block the current through them. The current will flow from 2 to 4 to 3 to 1.

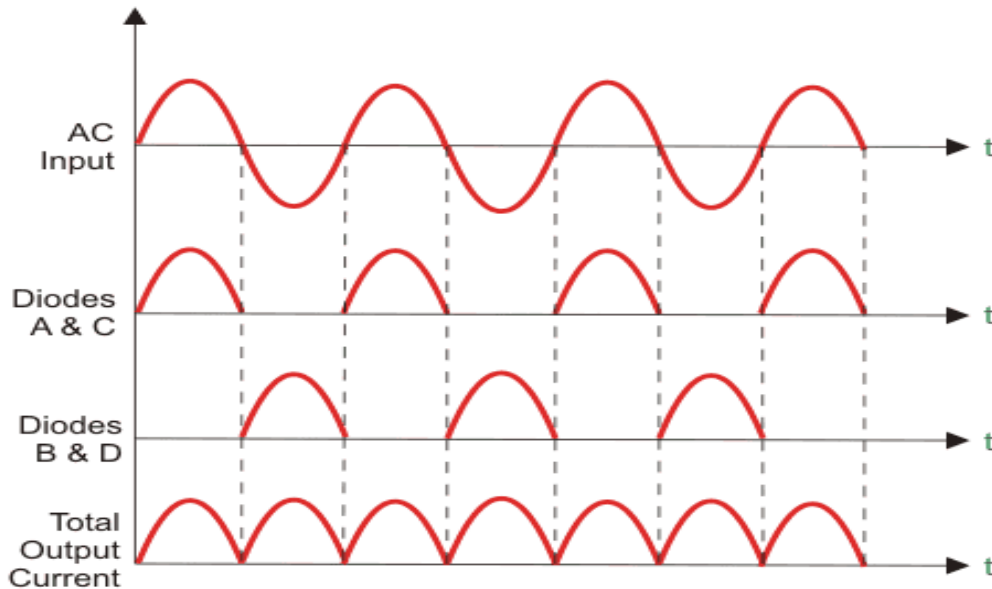


Figure - 4

### 4.3 Procedure:

1. Connect the circuit shown in the below figure (5).

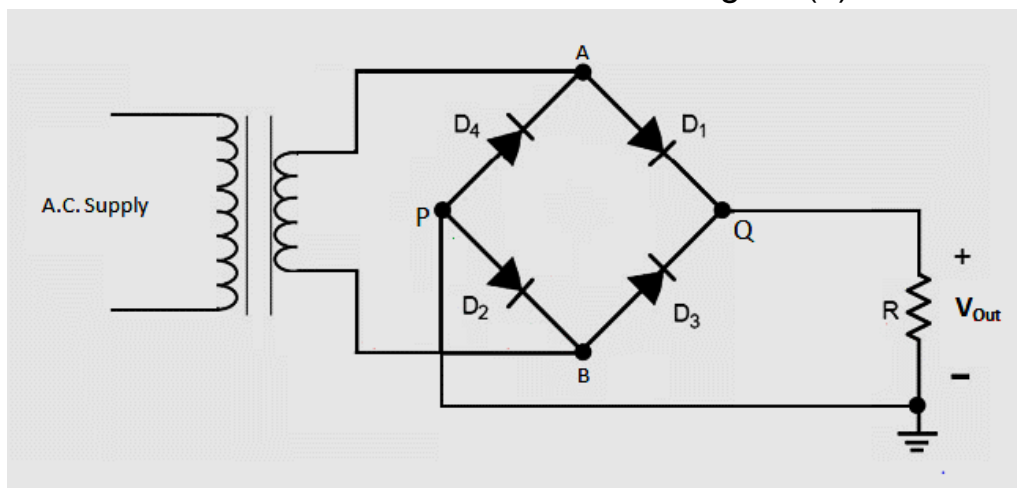


Figure -5

2. Set the function generator by an AC voltage (5 V) and a frequency (250HZ).
3. Connect the Oscilloscope to both ends of the resistance, Draw the wave shown in the screen of the Oscilloscope.

#### **4.4 Discussion:**

1. What are the components of the bridge rectifier ?
2. Calculate the value of Vr.m.s and Vd.c for the output wave?

$$\mathbf{V_{r.m.s} = V_{peak} / 2}$$
$$\mathbf{V_{d.c} = V_{peak} / \pi}$$

