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Lab Report on
Study of full wave bridge rectifier circuit

Report No: 4

Course Code: EEE 212

Course Title: Electronic devices and circuits lab

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Experiment name:

Study of full wave bridge rectifier circuit.

Theory:

 A rectifier converts an AC signal into a DC signal. A full wave rectifier is a circuit arrangement which makes use of both half cycles of input alternating current (AC) and converts them to direct current (DC). Which arrangement uses a normal transformation with 4 diodes arranged as a bridge is known as a bridge rectifier. At any instant when the transformer secondary voltage attains positive peak value Vmax, diodes D1 and D3 will be forward biased (conducting) and the diodes D2 and D4 will be reversed biased (non conducting). During the positive half cycle the diodes are forward biased and negative half cycle the diodes are reversed biased.

Apparatus:

        1. Multi – meter.
        2. Resistor.
        3. Diodes.
        4. Connecting ware.
        5. Oscilloscope.

Diagram:
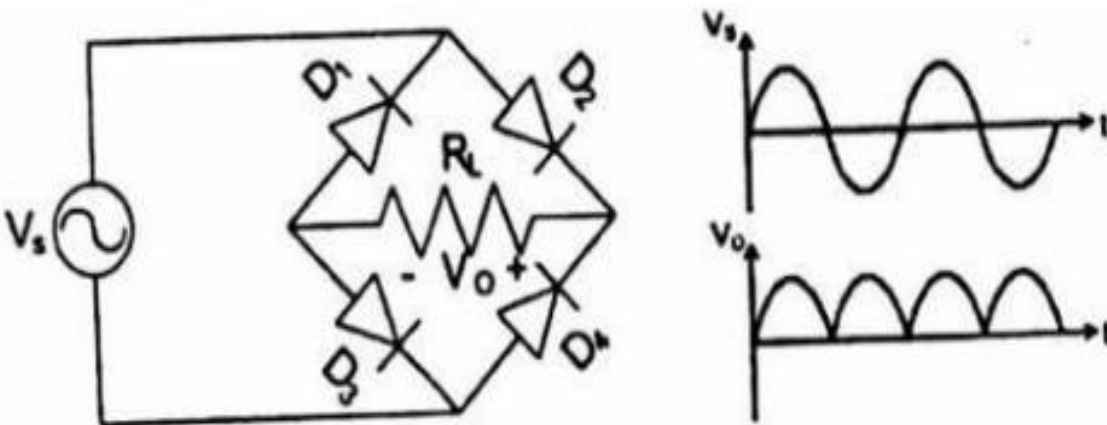
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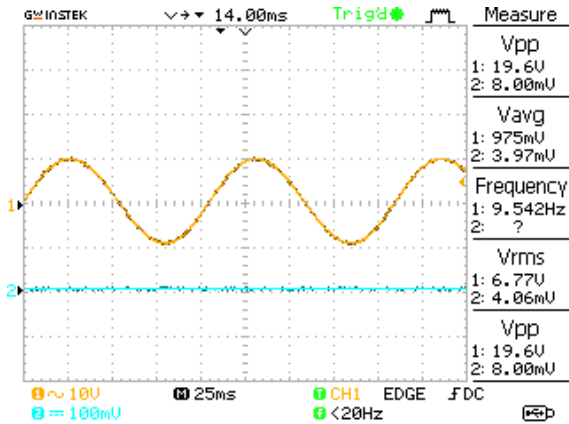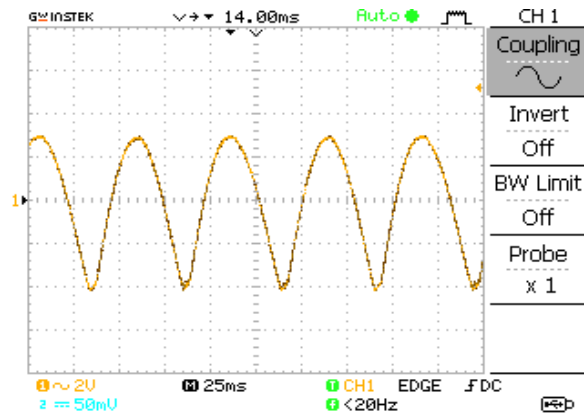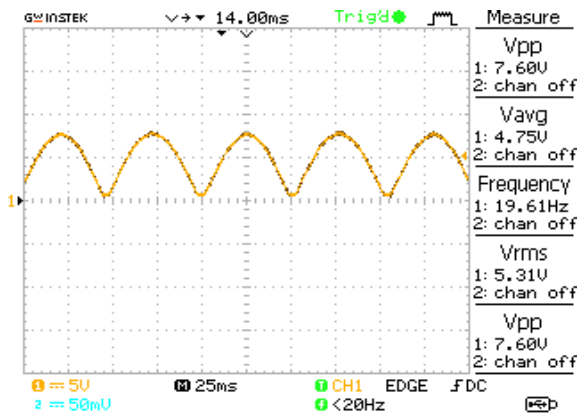
Calculation:

Input:

Here, $V_m = \sqrt{2} \times 6.67 = 9.57$ v

$$T = 4.2 \times 25 \text{ ms}$$

$$= 105 \text{ ms}$$

$$f = 1 / T$$

$$= 1 / (105 \times 10^{-3}) \text{ Hz}$$

$$= 9.54 \text{ Hz.}$$

Output:

Here, $V_m = \sqrt{2} \times 5.32 = 7.52v$

   $f = 18.5$ Hz

   $T = 1/f$

   $= 1/18.5 = 0.054$ s

   Voltage drop $= 9.57v - 7.52v = 2.05v$

Conclusion:

The fact of this experiment was to know how to build a full wave bridge rectifier circuit. The full wave rectifier used most often in high power applications because of their minor disadvantage being. The output frequency is twice than the input frequency. By performing this experiment we know all this things.