

**ELECTRONICS LAB REPORT**  
**EXPERIMENT (5)**  
**RECTIFICATION AND FILTERING**

<b>Name:-----</b>	<b>Date:-----</b>
<b>Registration No:-----</b>	<b>Partner's Name:-----</b>
<b>Physics Section:-----</b>	<b>Registration No:-----</b>
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**DATA AND DATA ANALYSIS**

**\*All the input waveforms are sine waves .**

**A. Half wave rectifier.**

**1-Connect the circuit shown in figure 1.**

**2-Sketch the output voltage waveform .**

**3-Measure the peak voltage of the input waveform .**

$V_{p(in)} =$ -----

**3-Measure the peak voltage of the output waveform .**

$V_{p(out)} =$ -----

**4-Calculate the peak voltage of the output waveform and compare with the measured value .**

**5-** Measure the DC output voltage .

$V_{DC} =$ -----

**6-** Calculate the DC output voltage and compare with the measured value .

**B. Full wave rectifier .**

**1-**Connect the circuit shown in figure 2.

**2-**Sketch the output voltage waveform .

**3-**Measure the peak voltage of the input waveform .

$V_{p(in)} =$ -----

**4-** Measure the peak voltage of the output waveform .

$V_{p(out)} =$ -----

**5-**Calculate the peak voltage of the output waveform and compare with the measured value .

**6-** Measure the DC output voltage .

$V_{DC} =$ -----

7- Calculate the DC output voltage and compare with the measured value .

**C. Bridge rectifier .**

1-Connect the circuit shown in figure 3.

2-Sketch the output voltage waveform .

3-Measure the peak voltage of the input waveform .

$V_{p(in)} =$ -----

4-Measure the peak voltage of the output waveform .

$V_{p(out)} =$ -----

5-Calculate the peak voltage of the output waveform and compare with the measured value .

6- Measure the DC output voltage .

$V_{DC} =$ -----

7- Calculate the DC output voltage and compare with the measured value .

8- Explain why the DC output voltage of section “ C “ is twice that of section “ B “.

**D. Capacitor input filtering .**

1- Connect the circuit shown in figure 4.

2- Sketch the output voltage waveform for  $C = 50 \mu\text{F}$  ,  $100 \mu\text{F}$  and  $200 \mu\text{F}$ .

3- Measure the peak to peak ripple voltage .

$V_{pp} = \text{-----} C = 50 \mu\text{F}$

$V_{pp} = \text{-----} C = 100 \mu\text{F}$

$V_{pp} = \text{-----} C = 200 \mu\text{F}$

**4-**Calculate the peak to peak ripple voltage and compare with the measured value for  $C = 50 \mu\text{F}$  ,  $100 \mu\text{F}$  and  $200 \mu\text{F}$ . Use the value of the output peak voltage as measured in section “ C “.

**5-**Measure the DC output voltage .

$V_{\text{DC}} = \text{-----} C = 50 \mu\text{F}$

$V_{\text{DC}} = \text{-----} C = 100 \mu\text{F}$

$V_{\text{DC}} = \text{-----} C = 200 \mu\text{F}$

**6-**Calculate the DC output voltage and compare with the measured value for  $C = 50 \mu\text{F}$  ,  $100 \mu\text{F}$  and  $200 \mu\text{F}$  .

**7-**What causes the ripple voltage on the output of a capacitor filter.