

EXPERIMENT NO. 3 AC/DC VOLTAGE RIDING A DC BIAS

I. Objectives

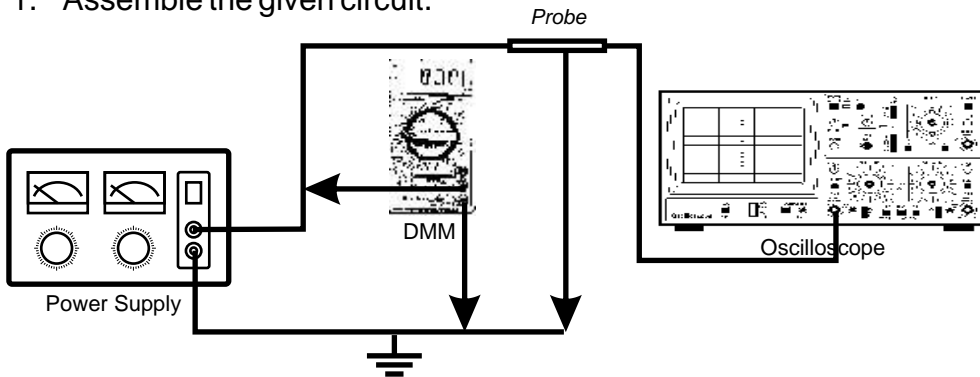
1. To be able to separate the AC voltages on DC bias voltages.
2. To be able to see the waveform generated by combined AC-DC voltage components.

II. Materials

Oscilloscope	Power Supply
DMM	Extension wire
Signal Generator	0.47 μ f / 30 μ f Mylar capacitor
2 - 330 Ω - 1 watt resistor	connecting wires with alligator clips

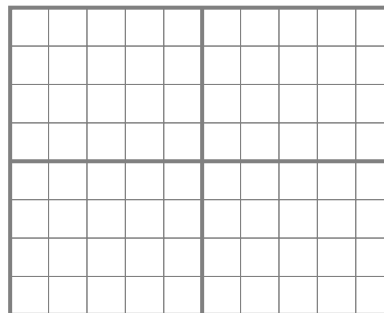
III. Procedure

1. Assemble the given circuit.

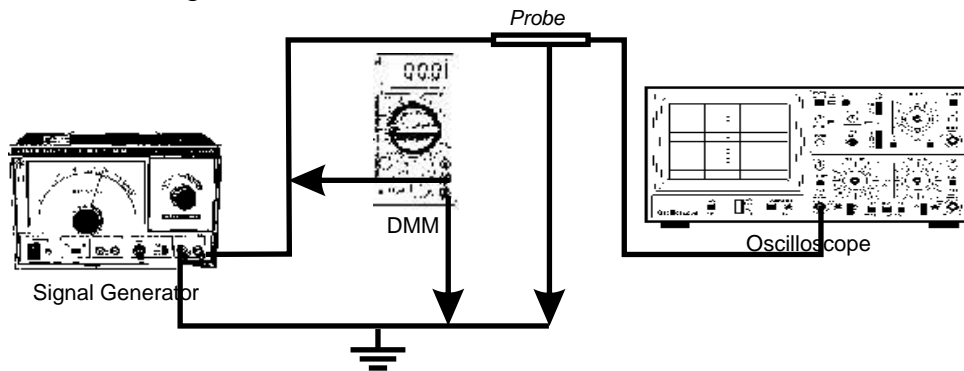


2. Set the DMM to the appropriate DC scale. Set the AC/DC/GND switch of the oscilloscope to DC function. Adjust the output voltage of the Load Star power supply to 6 volts DC.
3. Power up the circuit. Record the DMM value. Draw the wave form of the oscilloscope.

$V_{DC} =$ _____
 $V_{P-P} =$ _____
 volts/div = _____



4. Assemble the given circuit below.

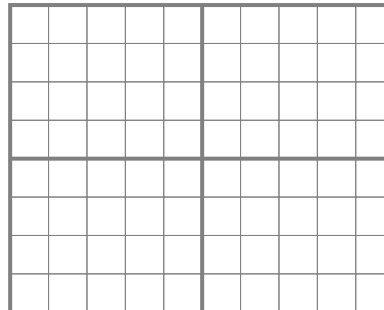


5. Set the DMM to the appropriate AC voltage range scale ($200V_{AC}$). Set the attenuator of the signal generator to minimize its amplitude control knob to maximum. Then set the AC/DC/GND switch of the oscilloscope to AC. Set the frequency of the generator to 60Hz.
6. Power up the circuit. Record the DMM value. Draw the wave form of the oscilloscope.

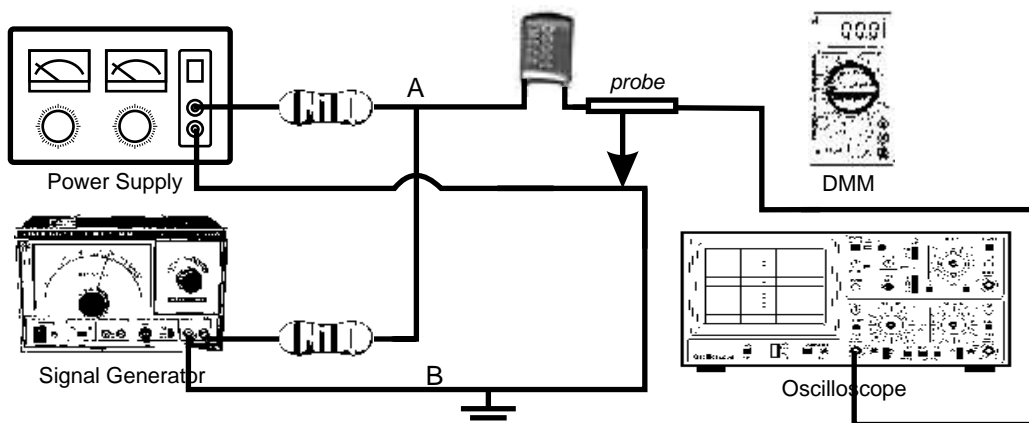
V_{DC} = _____

V_{P-P} = _____

volts/div = _____



7. Assemble the given circuit below.



8. Set the frequency of the generator to 60Hz and its output waveform to sinewave. Set the output of the power supply to $6V_{DC}$. Set the DMM to $200V_{AC}$ function. Set the AC/DC/GND switch function of the oscilloscope to DC. Set amplitude control knob of the generator to maximum.

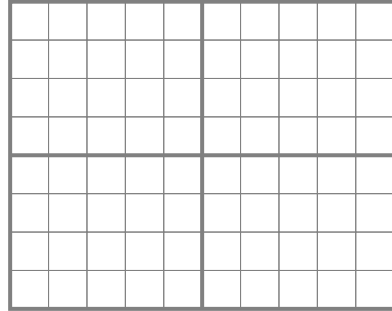
9. Draw the waveform that is generated at Point A and B. Draw the waveform generated at Point C and D. Record the reading of the DMM

Point A and B

$$V_{DC} = \underline{\hspace{2cm}}$$

$$V_{P-P} = \underline{\hspace{2cm}}$$

$$\text{volts/div} = \underline{\hspace{2cm}}$$

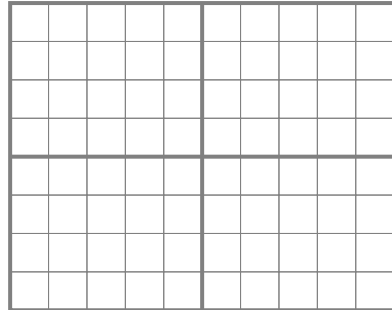


Point C and D

$$V_{DC} = \underline{\hspace{2cm}}$$

$$V_{P-P} = \underline{\hspace{2cm}}$$

$$\text{volts/div} = \underline{\hspace{2cm}}$$



IV. Discussion

V. Observation

VI. Conclusion