Ex. No.:9 **Date: 30-10-2020**

Calibration of voltmeter and ammeter

Aim: Calibration of voltmeter and ammeter

Apparatus/Tool required: Voltmeter, Ammeter, Calibration setup, connecting wires.

Theory:

Calibration is a documented comparison of the measurement device to be **calibrated** against a traceable reference standard/device. The reference standard may be also referred to as a "calibrator." Logically, the reference standard should be more accurate than the device to be **calibrated**.

Procedure:

1. Configure the calibration setup by specifying the inputs and outputs.
2. Connect the device under test to the calibration setup using connecting wires.
3. Supply a known voltage from the calibration setup and check the dial of the device under test.
4. Note down error, if any.

Observations (Answer the following questions):

1) **Explain zero error of a voltmeter**
2) **The picture shown below is that of a digital or analog voltmeter?**

3) **From the video, mention whether there is error at 5V, 10V, 15V and 20V in the voltmeter calibration**
4) **From the video, mention whether there is error at 5V, 10V, 15V and 20V in the ammeter calibration**
5) **What is a CRO used for?**

Result:

When the pointer which is in the voltmeter doesn't corresponds to zero mark accurately then it is said to be zero error of voltmeter.

2) The above picture shows the Analog voltmeter.

3) In the voltmeter calibration, there were errors at 5V, 10V, 15V and 20V

4) In the ammeter calibration, there was no error at 5mA, but there were errors at 10mA, 15mA, 20mA, 24mA

5) The CRO (Cathode Ray Oscilloscope) is a common laboratory instrument that provides accurate time aplitude measurements of voltage signals over a wide range of frequencies.

Used to display different types of waveforms (like sin and cos) for input AC signals. By seeing the waveform we can analyse some properties like amplitude, frequency etc.

Shot on OnePlus
By Prashanth

Conclusion:

Calibration helps us in determining the error occur in the reading so that we can correct for getting the ideal reading.

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