

LABORATORY REPORT - CHAPTER 1

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Date	12.10.22
Total Grade	/100

Remarks: Record all your measurements and write all your answers in the boxes provided. Do not write anything in the cells labelled as GRADE. Never forget to explain your results and to specify the units of your measurements.

Preliminary Work

1. Multimeter

A multimeter is a combination measuring instrument that can act like as voltmeter, ammeter, ohmmeter and in some cases as capacitance meter.

1. Read the manual of your multimeter. Find the smallest and largest resistance, DC voltage, AC voltage, DC current and AC current your multimeter can measure. Note that some multimeters cannot read AC current.

$$R_{low} = 200\Omega$$

$$R_{high} = 2M\Omega$$

$$\text{DC: } V_{low} = 200\text{mV}$$

$$V_{high} = 600\text{V}$$

$$\text{AC: } V_{low} = 200\text{V}$$

$$V_{high} = 600\text{V}$$

$$\text{DC: } I_{low} = 200\mu\text{A}$$

$$I_{high} = 10\text{A}$$

$$\text{AC: } I_{low} = \text{Cannot read}$$

$$I_{high} = \text{Cannot read}$$

1.1. GRADE:

2. Most good multimeters have a RANGE button. If you know the approximate value of the resistance you want to measure, you can set the specific range of measurement by repeatedly pressing the RANGE button. Otherwise, the multimeter is in the slower AUTO mode. Find out if your multimeter has a "RANGE" function. If it does, learn how it functions.

RANGE function present? YES

Explain how it works: There is a knob in the middle which I can turn it gradually according to the desired ranges. Adapting the range of the parameters to the desired value increases precision in the measurement. The multitudes of the variables should be consistent with each other for accurate measurements.

1.2. GRADE:

3. Some multimeters have a "HOLD" function. If you press the HOLD button during a measurement, the reading will be held. Find out if your multimeter has a HOLD function. If it does, learn how it functions.

HOLD function present? YES

Explain how it works: There is a button on the left corner of my multimeter which says hold. When pressing on it the signal value freezes so that one can read the values easily.

1.3. GRADE:

4. As we do not have four eyes, in difficult circumstances we cannot look at the measurement probes and the multimeter scale at the same time. Some good multimeters have a "AUTO HOLD" function. If you make a measurement after activating the AUTO HOLD, the reading will be held for us to look at it later. Find out if your multimeter has a AUTO HOLD function. If it does, learn how it functions.

AUTO HOLD function present? Unfortunately Not

Explain how it works: When it is impossible to press the hold button during a measurement auto hold function automatically searches for a stable signal and captures it so that the user can see the result when his/her both hands are full.

1.4. GRADE:

5. Some multimeters have capacitance measurement capability. Find out if your multimeter has this capability. If it does, find out the minimum and maximum capacitance values it can measure.

Capacitance measurement function present? Unfortunately Not,

it has only Ac/Dc measurements, Diode test, transistor test, audible continuity test, temperature measurement, test signal use, battery and fuse replacement.

Minimum capacitance= -

Maximum capacitance= -

1.5. GRADE: