

Metrology and Sensors

Prof. Dr.-Ing. G. Matz

Knowledge Test - Questions

1. You should be able to describe the principle function of the electrical elements R, C, L and diodes. What are diodes used for?

2. A simple high-pass filter consists of R and C.
What is the value of C, if the cutoff-frequency is $f = 10 \text{ Hz}$ and $R = 1 \text{ MOhm}$?

You should know analog instruments like voltmeters and oscilloscopes as well as digital instruments like digital voltmeters and counters.

3. Is the input resistance of a voltmeter high or low (why) and what is the value approximately?

4. How many steps can be resolved by a 10-bit AD-Converter ?

5. A voltage of $U = 4.5 \text{ V}$ has to be measured by an analog instrument.
Which range would you select to measure this voltage: 1 V, 2 V, 5 V, 10 V?