

8. The voltage conversion range of a 10-bit AD converter is [-5 mV, +5 mV]. The quantization step of this converter is:
- a) $\sim 2.45\mu\text{V}$
 - b) $\sim 4.9\mu\text{V}$
 - c) $\sim 9.8\mu\text{V}$
 - d) $\sim 19.5\mu\text{V}$
9. The correlation coefficient is:
- a) a value comparing size of two signals
 - b) a scalar defining statistical similarity of two signals
 - c) a signal being a result of correlation of two signals
 - d) a scalar indicating the maximum value of either of the compared signals
10. Write an equation defining the Discrete Fourier Transform (either in a trigonometric or exponential version) and explain its variables
11. Define two properties of the Fourier transform and explain one of your choice:
12. A signal is sampled at a frequency $f_s=1000\text{Hz}$. How many samples N of a signal we should use in a Discrete Fourier Transform computations to obtain frequency resolution of at least 0.5 Hz? Show the calculations.