Contents:
- Fundamentals
- Circuits with diodes

1. dc and ac signals, waveforms.

2. KCL, Ohm Law – for a simple circuit, one voltage source and two resistances.

3. KVL, Ohm Law, voltage divider, Millman theorem, superposition method – for a circuit with more than one voltage sources and more than two resistances.

4. Assume D - constant voltage drop model, \( v_D = 0.7V \):
   a) How does the VTC \( v_o(v_I) \) look like?
   b) Plot \( v_o(t) \) for \( v_I = 12\sin \omega t \) [V]?
   c) What is the range of possible values for \( R \) if the maximum forward diode current is \( I_{D\text{max}} = 50mA \) and \( v_I = 12\sin \omega t \) [V]?
   d) Determine the VTC if a dc biasing voltage source \( V_{BIAS} = 5V \) is introduced in circuit in series with \( R \)?