dummy11

Student Group

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Table of Contents

Exercise - Quiz

What type of amplifier produces an output current $I_\rm O$ from an input voltage $U_\rm I$, such that an output voltage $U_\rm O = k \cdot U_\rm I$ with constant k is produced?

- ☐ Current-to-voltage converter
- ☐ Current amplifier
- ☐ Voltage-to-current converter
- ☐ Voltage amplifier

check answers
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Exercise - Quiz

The transfer resistance ...

- ☐ Cannot be measured using a resistance meter
- ☐ Can be used for voltage dividers
- ☐ Is given by ${U_\rm I} \over {I_\rm O}$, with input voltage $U_\rm I$ and output current $I_\rm O$
- ☐ represents the gain

check answers
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Exercise - Quiz

An amplifier circuit...

- ☐ ... needs an additional power supply for the amplification.
- ☐ ... can only be built with positive

feedback.
- ☐ ... controls by an input circuit with high power output with small power.
- ☐ ... has to include a voltage divider

check answers
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Which of the following statement(s) is/are correct?

- ☐ P-doping produces quasi-free electrons
- ☐ Conductivity in semiconductors happens via conduction and valence band
- ☐ The diode blocks at any negative voltage (reverse voltage).
- ☐ The diode can be modeled as a voltage source and capacitor

On which physical properties does the forward voltage U_S depend?

- ☐ temperature
- ☐ current range considered
- ☐ (semiconductor) material
- ☐ LED color
- ☐ breakdown voltage of the Z-diode

Which statement(s) about the junction is/are correct?

- ☐ There is no electric field in the junction
- ☐ The junction does not contain free charge carriers
- ☐ The junction becomes larger when current is passed through it
- ☐ Electron-hole pairs are created in the junction by photons
- ☐ The junction is enlarged in the Schottky diode compared to the PN diode
- ☐ The junction forms a capacitor

Statements about the conduction/valence band

- ☐ Photon capture can move electrons from the conduction band to the valence band
- ☐ "Recombination" removes an electron from the valence band and a hole from the conduction band
- ☐ A donor creates one or more quasi-free electrons
- ☐ The band gap indicates the maximum energetic distance between the conduction and valence bands

The forward voltage ...

- ☐ ... for silicon is about 0.6 ... 0.7 V
- ☐ ... serves to allow electrons to cross the bandgap
- ☐ ... depends on the current range under consideration
- ☐ ... is smaller for germanium diodes than for silicon diodes.

The forward current ...

- ☐ ... Is dependent on the temperature
- ☐ ... depends on the forward voltage
- ☐ ... is logarithmic concerning the forward voltage
- ☐ ... depends on the reverse voltage

Check answers
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