# dummy11

## Student Group

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## Table of Contents

**Exercise - Quiz**

Which of the following statement(s) for real diodes is/are correct?

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

check answers
You Scored % - /

**Exercise - Quiz**

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

check answers
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**Exercise - Quiz**

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

check answers
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**Exercise - Quiz**

The forward voltage ...

- ☐ ... for silicon is fixed 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.

check answers
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**Exercise - Quiz**

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

check answers
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**Exercise - Quiz**

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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