

Quiz 11

Name:

Date: 13.05.2025

Question 1

What effect does confinement have on the conduction band of a semiconductor? (One sentence)

Energy level discretization (DOS modified), increasing the CB energy.

Question 2

Which of these parameters primarily control the confinement energy of an electron in a quantum well? (Multiple choices are possible)

- The electron effective mass
- The reduced mass
- The well width

Question 3

Schematically draw the typical density of states of a quantum dot.

Below is shown the typical DOS for quantum dot, quantum wire, quantum well, and bulk:

