

Quiz 11

Name:

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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:

