

Quiz for Lesson 5

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Electronic Circuits 1

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Prob. 1

Does the depletion width in a PN junction increase or decrease as the PN junction becomes more strongly reverse biased? Briefly explain why.

Prob. 2

Does the junction capacitance for a PN junction increase or decrease as the PN junction becomes more strongly reverse biased? Briefly explain why.

Prob. 3

A PN junction has the reverse saturation current of 10^{-16}A . Estimate the voltage applied to the PN junction when the current flowing through the PN junction is 1mA ? Use $V_T = 25\text{mV}$ and $\ln(10) = 2.3$

Prob. 4

How much voltage increase is needed for the PN junction diode described in Prob. 3 to have 10 times larger current?