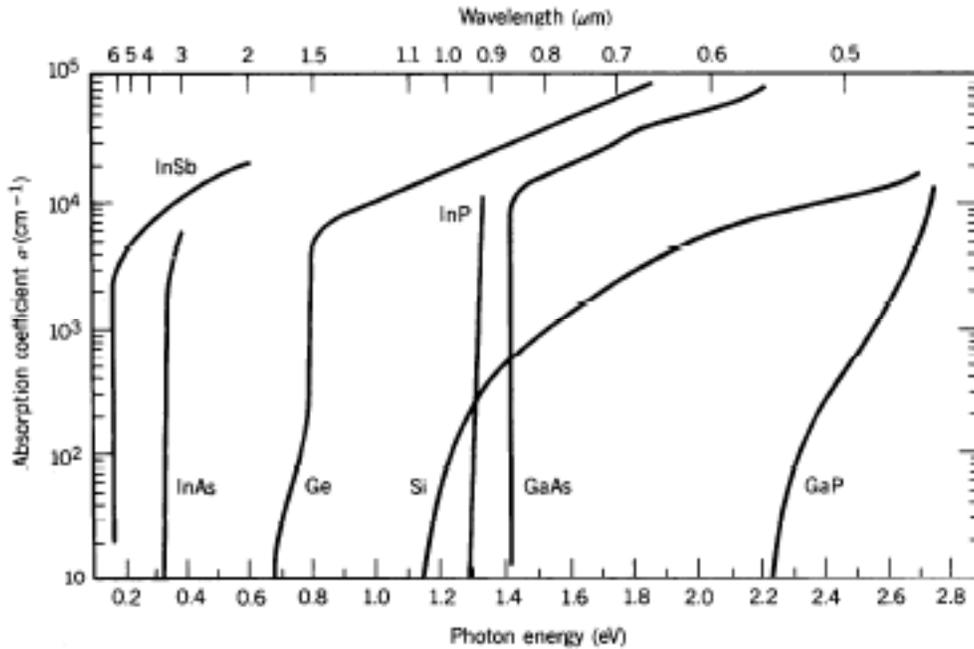


3.46 PHOTONIC MATERIALS AND DEVICES

Quiz 5—March 20, 2006

Si and GaAs absorption



Consider the absorption spectra of Si and GaAs in the figure above.

(1) Why is the onset of absorption at 1.12 eV for Si and 1.42 eV for GaAs?

(2) Why is the saturation value of absorption $\sim 10^3 \text{ cm}^{-1}$ for Si and $\sim 10^4 \text{ cm}^{-1}$ for GaAs?

Name: _____