1 Angstrom = 0.1nm

Solutions

Anika Kumar

A) $\lambda_{rest} \sim 486.3\,nm$
$\lambda_{obs} \sim 4050\,nm$

* Plot is in Å remember to convert to nm! *

$$z = \frac{\lambda_{obs} - \lambda_{rest}}{\lambda_{rest}} \quad \text{or} \quad z = \frac{\lambda_{obs}}{\lambda_{rest}} - 1$$

$$z = \frac{4050nm - 4863nm}{486.3\,nm} = \boxed{7.3}$$ ← wow!!!

B) Band gap for InSb ~ 0.22 eV

$$\lambda = \frac{1240\ ev \cdot nm}{E} = \frac{1240 ev \cdot nm}{0.22 eV} = \boxed{5636.36nm}$$

C) $\lambda_{obs} = 5636.36nm$
$\lambda_{rest} = 486.3\,nm$

$$z = \frac{\lambda_{obs} - \lambda_{rest}}{\lambda_{rest}} = \boxed{10.59}$$

D) yes ... he is uncool for that :