Harshit Mawandia 2020CS10348

2)2) a) When energy is transferred in solids via transverse waves, like light, we call the waves 'optical' waves. Like light can be thought as a wave or stream of photons, vibration in solids can be thought of as particles called phonons. They only have values of energy $\hbar\omega$ apart from one another, when frequency is ω.

Acoustic waves are waves that travel longitudinally like sound waves whilst optical waves are those which travel transversally like light.

b) $H = 10^5$ A/m

$\chi = 0.0003$

$B = \mu_0(1+\chi)H$

$= 4\pi \times 10^{-7} \times 1.0003 \times 10^5$

$= 12.57 \times 10^{-2}$

$= 1.257 \times 10^{-1}$