

A Few Questions About Light!!

1. What is the frequency of light with a wavelength of 410 nm?
(7.3×10^{14} Hz)
2. What is the energy of a quantum of light of frequency 4.31×10^{14} Hz?
(2.86×10^{-19} J)
3. What is the wavelength of light with frequency 6.6×10^{14} Hz?
(4.5×10^{-7} m)
4. What is the energy of light with wavelength 662 nm?
(3.00×10^{-19} J)
5. What would be the wavelength of light necessary to cause electrons to leave the surface of a substance with an energy of 1.20×10^{-19} J? Assume the energy necessary to release the electron from the surface is 3.60×10^{-19} J.
(4.14×10^{-7} m)
6. A certain violet light has a wavelength of 413 nm. What is its frequency?
(7.26×10^{14} Hz or 1/s)
7. A certain green light has a frequency of 6.26×10^{14} Hz. What is its wavelength?
(4.79×10^{-7} m)
8. What is the energy content of one quantum of the light in problem 6?
(4.81×10^{-19} J)
9. What is the energy content of one quantum of the light in problem 7?
(4.15×10^{-19} J)