Chem1211K Homework Chapter 6

1. What is the wavelength of a photon having a frequency of 64.6 THz? (1 THz = 1015 Hz, *c* = 3.00   m/s, *h* = 6.63  10–34 J  s)
2. What is the frequency of a photon having a wavelength of 954.9 nm? (, )
3. A light emitting diode (L.E.D.) emits photons with energy of  J. What is the energy per mole of photons emitted?
4. What is the energy of a photon of electromagnetic radiation with a wavelength of 877.4 nm? (**).
5. What is the wavelength of a photon that has energy of  J?
6. What is the frequency of photons that have molar energy of 525 kJ/mol? ().
7. What is the wavelength of light emitted when the electron in a hydrogen atom undergoes a transition from level ** ( ).
8. Calculate the the de Broglie wavelength of a 6.0 gram bullet traveling at the speed of sound. The speed of sound is 331 m/sec.
9. If the location of a particular electron can be measured only to a precision of 0.011 nm, what is the minimum uncertainty in the electron's velocity? (

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1. What is the ground-state electron configuration of tantalum (Ta)?