Electronic Structure Worksheet Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chem 140



h = 6.626e-34 J s

c = 3.0e8 m/s

1) Given 650 nm wavelength electromagnetic radiation (red), what is the energy of this radiation?

2) Given electromagnetic radiation with a frequency of 7.41e14 s-1 (Hz), what is the wavelength, in nm, of this radiation?

3) Given that electromagnetic radiation has an energy of 4.39e-19 J, what is the wavelength in nm?

4) Given 405 nm wavelength electromagnetic radiation (blue), what is the energy of this radiation?

5) Given electromagnetic radiation with a frequency of 4.61e14 s-1 (Hz), what is the wavelength, in nm, of this radiation?

6) Given that electromagnetic radiation has an energy of 3.06e-19 J, what is the wavelength in nm?

**Summary**

***Wavelength*** in nm for visible light 🡪 400 nm 700 nm

***Frequency*** in 1/s (Hz) for visible light 🡪 7.5e14 1/s 4.3e14 1/s

***Energy*** in J for visible light 🡪 5.0e-19 J 2.8e-19 J