Chemistry 141 Name

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Quiz 5 (20 points) October 23, 2008

All work must be shown to receive credit.

Data: c=νλ, E=hν, 1/λ=-R(1/ni2-1/nf2), λ=h/mv,Δx Δh/4Π, h = 6.626 x 10-34 J sec, c = 3.00 x 108 m/sec, NA = 6.02 x 1023 /mol, kw = 1.0 x 10-14 M2

1. (6 points) For light with a wavelength of 429 nm, calculate the frequency and energy of the light.
2. (6 points) The ionization energy of phosphorous is 1012 kJ/mol. Determine the wavelength of light that will just ionize an atom of phosphorous.
3. (6 points) Write the complete electron configuration of copper based on the periodic chart. Do you think there might be an anomalous configuration for this atom? If so, show it and explain why you expect this configuration might exist. If not, explain why not.
4. (2 points) Arrange the following in order of increasing radius S, S-2, Ar, K+1