

CH 7

Review Questions 4-8 (DUE 2/1)

4. Explain why ionized calcium can form absorption lines, but ionized hydrogen cannot.
5. Describe two ways an atom can become excited.
6. Why do different atoms have different lines in their spectra?
7. Why does the amount of blackbody radiation emitted depend on the temperature of the object?
8. Why do hot stars look bluer than cool stars?

Problems 1-2, 4 (DUE 2/1)

1. Human body temperature is about 310 K (3.10×10^2 K, or 98.6°F).
 - a) At what wavelength do humans radiate the most energy?
 - b) What kind of radiation do we emit?
2. If a star has a surface temperature of 20,000 K (2.00×10^4 K), at what wavelength will it radiate the most energy?
4. If you double the temperature of a blackbody, by what factor will the total energy radiated per second per square meter increase?