

## CH 105 Supplemental Instruction

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Sessions: Monday, 1:15-2:15, EB 128

Wednesday, 3:30-4:30, EB 133

Office Hour: Thursday, 3:30-4:30, EB 242 (Academic Success Center)

### Electromagnetic Radiation (EMR)

1. True or False: EMR is considered as waves.

2. The shorter the wavelength, the higher the energy.  
(longer) (lower)

3. Define a spectrum.

lines of different colors formed when light from a heated element passes through a prism.

4. When are photons emitted and how does this relate to the color that we see?

when electrons drop to lower energy levels.  
in the visible light spectrum, the emitted energy/photon appears as a color.

5. What must happen for an energy level to increase? What about decrease?

increase: absorb energy/photon  
decrease: emit energy/photon.

6. N stands for energy level.  $N=1,2,3$  etc. What does the number for N tell you?

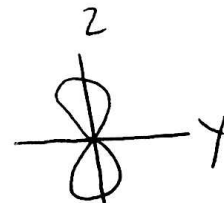
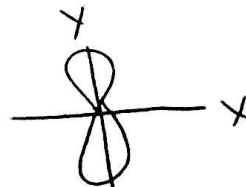
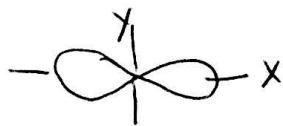
the number of energy sublevels in that respective energy level.

7. Name the sublevels, indicate how many orbitals each sublevel has, and draw the general shape of each sublevel.

s 1 orbital



p 3 orbitals

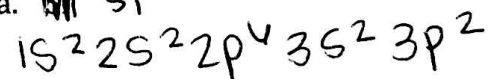


d 5 orbitals (don't worry about shape)

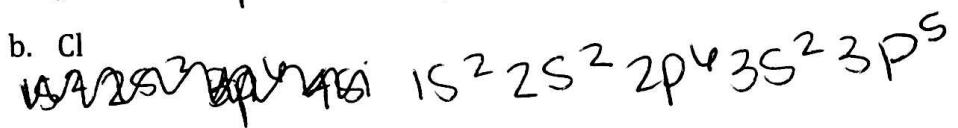
f 7 orbitals (don't worry about shape)

8. Write the full electron configuration for the following:

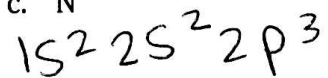
a. ~~Si~~ Si



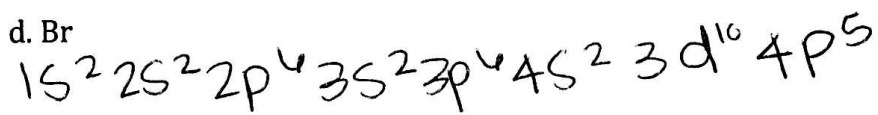
b. Cl



c. N

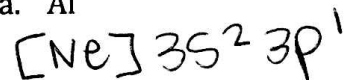


d. Br



9. Write the condensed (noble gas) electron configuration for the following:

a. Al



b. Be



c. Ca

