

**Ch. 13** electron configuration.

|                                    |  |
|------------------------------------|--|
| wavelength                         | frequency                                    |
| amplitude                          | electromagnetic spectrum                     |
| emission spectra                   | absorption spectra                           |
| Hund's Rule                        | Aufbau Principle                             |
| Pauli Exclusion Principle          | DeBroglie and Planck's formula               |
| Wave-Particle Duality theory       | Quantum numbers (n, l, m, s)                 |
| orbitals (s, p, d, f)              | c= speed of light= $3 \times 10^{10}$ cm/sec |
| photoelectric effect               | quanta                                       |
| Heisenberg's Uncertainty Principle | orbital diagrams                             |

**Chapter 14:** The periodic chart:

|                                       |                              |
|---------------------------------------|------------------------------|
| alkali                                | halogen                      |
| alkaline earth                        | noble gas                    |
| family/group                          | period/row                   |
| metals/nonmetals                      | actinides                    |
| stairstep line                        | Mendeleev                    |
| ionization energy                     | lanthanides                  |
| atomic vs. ionic size                 | transition metals            |
| electronegativity                     | inner transition metals      |
| Valence electrons p. 413 next chapter | Noble gas core configuration |

II. Equations to know:

They will be given on the test

$$\lambda = h/mv$$

$$h = 6.63 \times 10^{-34} \text{ Jsec or } (\text{kg m}^2/\text{s})$$
$$\text{so } h = 6.63 \times 10^{-34} \text{ kg}\cdot\text{m}^2/\text{sec}$$

$$E = h\nu$$

$$c = \lambda \nu \quad c = 3 \times 10^{10} \text{ cm/sec}$$

**Chapter 13:**

- Be able to give the complete electron configuration of any atom OR ION. Long and noble gas core style – my choice.
- Be able to tell the maximum number of electrons you can have in any given energy level  $2(n^2)$ .
- Know how many of each orbital there are: 1 s, 3 p, 5 d, 7 f.
- Be able to calculate