

Atomic Structure Review

1. Name the type of electromagnetic radiation that has the highest

- a. Wavelength *radio waves*
- b. Frequency *gamma rays*
- c. Energy *gamma rays*

2. Name the type of visible light that has the lowest

- a. Wavelength *violet*
- b. Frequency *red*
- c. Energy *red*

3. Put the following types of electromagnetic radiation in order of highest frequency to lowest:
Yellow, Infrared, Blue, Radio, Ultraviolet, Microwave

Ultraviolet, blue, yellow, infrared, microwave, radio

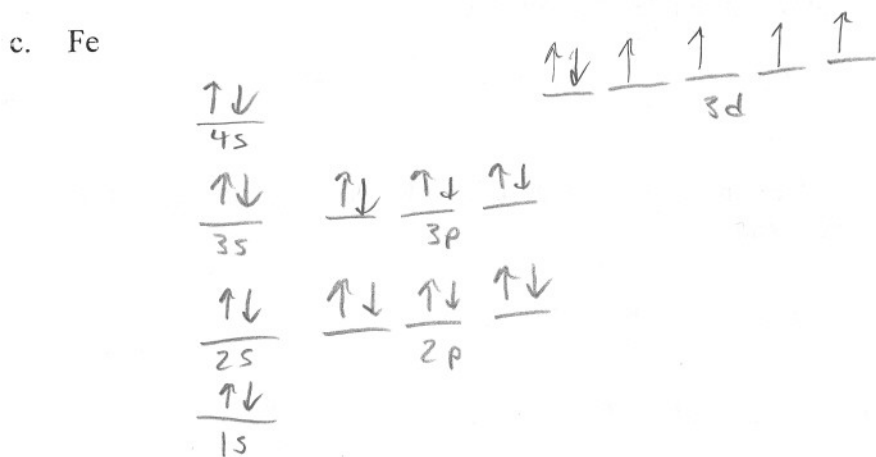
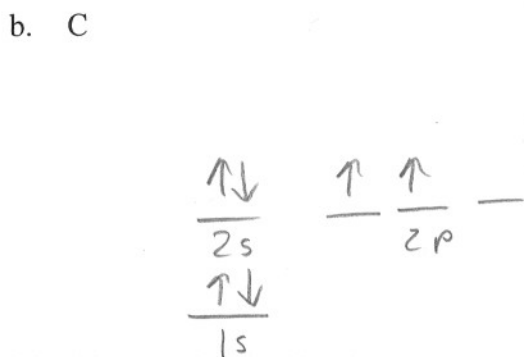
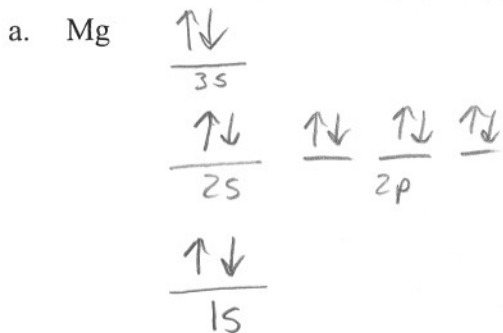
4. Put the following types of electromagnetic radiation in order of lowest energy to highest:
Green, X-rays, Gamma rays, Radio

radio, green, x-rays, gamma rays

5. How many electrons can fit in each of the following orbitals?

- a. 1s *2*
- b. 2p *6*
- c. 3d *10*
- d. 4f *14*

6. Draw the electron configurations for each of the following elements showing all appropriate energy levels and appropriate electron spins.



7. Define:

a. Ionization energy

- the energy required to remove an electron from a gaseous element

b. Electronegativity

- the relative ability of the atom's ability to attract electrons in a chemical bond.

8. Explain what happens to each of the following as we move left to right through a period.

- a. Atomic radius *decreases*
- b. Ionic radius *decreases*
- c. First ionization energy *increases*
- d. Electronegativity *increases*

9. Explain what happens to each of the following as we move down a group.

- a. Atomic radius *increases*
- b. Ionic radius *increases*
- c. First ionization energy *decreases*
- d. Electronegativity *decreases*