Name: _____ Chem 10, Section: _____

Prelab Assignment: Flame Tests of Metal Cations

1. In this lab, you will perform flame tests of several different metal cations. The characteristic colors observed are due to emitted electromagnetic radiation from the excited metal cations.

a. In this lab, how do the metal cations become "excited"?

b. Circle the correct responses to complete the following statement:

EM radiation is emitted when electrons make transitions from low / high to low / high energy levels.

2. In a flame test, the element Boron emits EM radiation that is predominantly green in color.

a. Use the Table in the Procedure to obtain the wavelength of this emitted radiation (in nm). Then convert this wavelength from nm to m.

b. Calculate the frequency of this emitted green radiation, in s^{-1}. Show your work.

c. Calculate the energy of this emitted green radiation, in J. Show your work.

3. Circle the type of EM radiation that has the property indicated:

a. Higher energy: UV or Visible light?

b. Longer wavelength: Orange or Blue light?

c. Higher frequency: IR or Yellow light?