

Name: _____ Date: _____ Class: _____

Lab 11 Periodicity of the Period Table: Ionization Energy & Electronegativity

Due Date : _____

Purpose: The study of the periodic table shows certain regularities in the properties of the the elements. We have already examined properties in families including the similarity in valance electrons, which show that elements with similar properties occur at regular intervals in the periodic table.

Material: Graph paper, pencil, ruler, data, textbook, excel

Procedure:

1. Make a point line graph plotting the first ionization energies of the first 20 elements plotted against the atomic numbers. (Treat the atomic number as the independent variable.)
2. At the top of the graph—bracket off the elements in period 2 from the elements in period 3.

Analysis: All answers should be typed and attached along with your graph(s).

1. Define Ionization Energy.
2. Using your graph, compare the trend in period 2 to period 3. Are there any exceptions in period 2 or 3, if so name them.
3. State and explain the two reasons for the trend noted above. You will definitely need to do research to answer this question.)
4. Using the periodic table, identify the trend for ionization energy within a family. Using correct chemistry terms explain why this trend occurs.
5. Define electronegativity
6. Graph the EN (electronegativity) for elements 3-10.
7. What is the trend that you note? Are there any exceptions, if so explain why they occur.

Don't forget your conclusion!