**Test #2 – General Chemistry**

1) Why do we say that all chemical properties are also intensive? (4 pt)

2) What is the difference between a dependent and independent variable? (4 pt)

3) One of Dalton’s laws is the Law of Multiple Proportions. In your own words, state the Law of Multiple Proportions. (3 pt)

4) What are isotopes, and how do they differ from each other? (4 pt)

5) List Dalton’s five laws. Indicate whether each is true:

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| Law (1 pt each) | Is it true? (1 pt each) |
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6) Answer the following questions (1 pt each):

* How many protons are in titanium-48? \_\_\_\_\_\_\_\_\_\_
* How many neutrons are in lithium-7? \_\_\_\_\_\_\_\_\_\_
* What is the atomic mass of strontium-88? \_\_\_\_\_\_\_\_\_\_
* What element has 50 electrons when neutral? \_\_\_\_\_\_\_\_\_\_

7) If I say that an element has 52 neutrons, why is it still impossible to identify the element on the periodic table? (5 pt)

8) Element X has three isotopes. 45X has an abundance of 23%, 46X has an abundance of 29%, and 47X has an abundance of 48%. Given this information, what is the average atomic mass of element X? (5 pt)

7) Explain how a line spectrum is formed. (3 pt)

8) Explain how spectroscopy can be used to identify an unknown element. (3 pt)