**Quiz 1A**

# Directions: Answer each of the following questions. Be sure to use complete sentences where appropriate. For full credit be sure to show all of your work. Where appropriate answers should be boxed for clarity, written to the correct number of significant figures, and, include the proper units.

1. Use a periodic table to complete the following (5 points):

|  |  |  |
| --- | --- | --- |
| Elements | | |
| Name | Atomic Number | Symbol |
| Beryllium | 4 | Be |
| Sulfur | 16 | S |
| Silicon | 14 | Si |

|  |  |
| --- | --- |
| Size of Atom | Chemical Reactivity |
| Small | Low |
| Medium | Intermediate |
| Large | High |

1. A chemist in an imaginary universe does an experiment that attempts to correlate the size of an atom with its chemical reactivity. The results are tabulated as follows (4 points):
   1. Formulate a law from this data.

All atoms contain a degree of chemical reactivity. The larger the size of an atom, the higher the chemical reactivity of that atom.

* 1. Formulate a theory to explain the law.

There are many correct answers. One example is: Conceivably, when the size of an atom is increased, the surface area of the atom is also increased; an atom with a greater surface area is more likely to react chemically.

1. Correct any entries in the table that are wrong (2 points):

|  |  |
| --- | --- |
| * 1. 895675 m | 6 |
| * 1. 0.000866 kg | ~~6~~ 3 |
| * 1. 0.6752100 s | ~~5~~ 7 |

1. Are the following statements true or false (5 points)?

|  |  |  |
| --- | --- | --- |
|  | When dispensing a reagent make sure to pour toward the label. | False |
|  | In lab this week you will be taking length measurements. | True |
|  | It is not necessary to wear safety glasses, if you wear prescription glasses. | False |
|  | Never leave a chemical reaction or flame unattended. | True |
|  | If you get a chemical on your hand rinse it for at least 15 minutes. | True |

1. Perform the calculations to the correct number of significant figures (4 points):
   1. 28.02 g – 27.99 g = 0.03 g
   2. 3.8 × 105 L – 8.45 × 105 L = -4.7 × 105 L