

## Chapter 1 - Notes

Define the following terms; explain the following concepts, and/or answer the following questions.

- 1) Chemistry is the study of ...  
...matter, its properties, interactions, reactions, and energy changes.
- 2) Scientific Method (list and explain the four key steps):
  - a) **Observation**
  - b) **Hypothesis** (educated guess to explain observation)
  - c) **Prediction** (based on the hypothesis, guess what will happen under a given set of circumstances)
  - d) **Test** (run experiment to see if prediction is correct. Adjust hypothesis accordingly. When hypothesis is consistent across experiments & predictions, a theory is born.
- 3) In simple terms, a hypothesis is a(n) EDUCATED GUESS.
- 4) Two critical characteristics of a valid theory is that the theory be PREDICTIVE and FALSIFIABLE.
- 5) Theory (def)  
...Explanation of a set of related observations that make *falsifiable predictions*.
- 6) Law (def)  
...a statement of scientific fact, universally accepted as true.
- 7) Explain the concept of “Occam’s razor”  
...the simplest explanation (the one with the fewest number of assumptions) is typically the best.