**Study Guide**
for Unit Exams in Chemistry A

Unit I: An Introduction to Chemistry

The following provides information about the content of this exam. Of course, any topic covered in the unit may be represented on the exam. Please use this sheet as a guide as you study. As always, let me know if you have any questions!

Exam Format: 31 Total Questions, 100 points possible

* 16 Multiple Choice (3 points each)
* 8 True/False (2 points each)
* 3 Matching (5-6 points each)
* 4 Essay (5 points each)

Formulas to Know:

* [K] = [°C] + 273.15
* [°F] = 9/5 [°C] + 32°
* [°C] = 5/9 [°F – 32°]
* Density =Mass /Volume
* Metric Unit Conversions:

|  |  |  |
| --- | --- | --- |
| **Prefix** | **Symbol** | **Meaning** |
| peta | P | 1,000,000,000,000,000 |
| giga | G | 1,000,000,000 |
| mega | M | 1,000,000 |
| kilo | k | 1,000 |
| deca | da | 10 |
| BASE | (gram, liter, etc) | 0 |
| deci | d | 0.1 |
| centi | c | 0.01 |
| milli | m | 0.001 |

Material to Review:

* The importance of peer review, ethics, and skepticism in science.
* Scientific advancements and their effects on different aspects of society including:

(Agriculture, Weather & Climate Change, Energy, Water, Medicine, Materials & Technology)

* Distinguish between questions that can and cannot be answered by scientific inquiry.
* How science can help you make informed decisions and responsible choices in everyday life.
* The five branches of chemistry and careers associated with each.
* Match the appropriate SI unit with the type of measurement it represents

(kilogram (mass), meter (length), second (time), Kelvin (temperature) Ampere (current))

* SI unit conversions
* Kelvin/Celsius unit conversions
* The relationship between Accuracy and Precision
* Significant figure rules
* Safe laboratory practices
* Density calculations

Terms to Know:

*(Make sure you can define and discuss each)*

* **Ethics**
* **Objective**
* **Skepticism**
* **Pseudoscience**
* **Fundamental Research**
* **Applied Research**
* **Organic Chemistry**
* **Biochemistry**
* **Inorganic Chemistry**
* **Physical Chemistry**
* **Analytical Chemistry**
* **Accuracy**
* **Precision**