

CHM1025 Study Guide for Exam 1 (Chapters 1, 2, &3) using textbook by Zumdahl 8th Edition
Revised September 15, 2014

This may NOT be a complete list of what will be on the Test. You must also study class notes, the homework, and the textbook. This is just a study guide to help you.

1. Be able to identify units of length, volume, mass, density, and temperature.
2. Be able to write numbers in scientific notation and in decimal form.
3. Be able to identify measured numbers versus exact numbers.
4. Be able to identify how many significant figures are in a number, and the last significant place (LSP).
5. Be able to follow significant figure rules when doing calculations, including rounding correctly.
6. Know all metric prefixes listed in Chapter 2 in your textbook: know the names, the correct abbreviation, and the conversion factor. For example, mm = millimeter, 1000mm = 1m. Or, nm = nanometer, 1 nm = 1×10^{-9} m.
7. Be able to write unit conversion factors and use to convert units.
8. Be able to convert one unit to another. See examples from class, your online homework, and the textbook.
9. Know the following conversions, any others that you may need I will give you.
 - 1 inch = 2.54 cm (an exact number)
 - 1 mL = 1 cm³ (exact)
 - 12 inch = 1 foot (exact)
 - 3 feet = 1 yard (exact)
 - 1 hour = 60 minutes (exact)
 - 1 minute = 60 seconds (exact)
 - 1 day = 24 hours (exact)
 - All metric conversions in Chapter 2 in your textbook. (exact)
10. Be able to convert units that are squared (area) or cubed (volume), for example, ft³ to mm³.
11. Know definition and equation for density, density = mass/volume, and be able to solve for and calculate the density, mass or volume, depending on which information is given in the problem.
12. Know definition and equation for specific gravity and be able to do calculations using this. See examples from class, online HW, and textbook.
13. Be able to convert temperatures into degrees Celsius, degrees Fahrenheit, and Kelvin.
14. Know the chemical symbols and English names of elements #1-38, 47, 48, 50, 53-56, 78-80, 82, 86-88, and 92. These will most likely be fill-in-the-blanks.
15. Be able to describe the Scientific Method.

Know definitions and identify examples of:

density, specific gravity, states of matter (=physical states), solid, liquid, gas, matter, physical and chemical properties, physical and chemical changes, element, compound, mixture, pure substance, homogeneous and heterogeneous mixture, solution, distillation, filtration.