

Dougherty Valley HS Chemistry
Study Guide Test #1

Ch. 1 (Physical and Chemical Properties and Changes)

Ch. 3 (Atomic Structure and Radioactivity)

Ch. 18 (Radioactivity and Radiation)

No graphing calculators will be allowed during the test. I suggest you get a scientific calculator such as Ti-30

+ denotes calculations

- Be able to tell the difference between a physical property and a chemical property
- Be able to tell the difference between a physical change and a chemical change
- Know examples for each type of property
- Know examples for each type of change
- Be able to draw a diagram of an atom (Bohr Model – Planetary Model)
- Know each type of separation technique (Distillation, Chromatography, Filtration, Xstallization)
- Know each type of classification of matter
 - o Homogeneous, Heterogeneous, mixture, etc...
- Know each type of subatomic particle (Proton, Neutron, Electron)
 - o Know the difference between their charges, location, etc...
- Be able to describe and explain the experiment that lead to the discovery of the electron
- Be able to describe and explain the experiment that lead to the discovery of the nucleus
- Know the different models of “atom”
 - o J.J. Thompson (plumb pudding)
 - o E. Rutherford (atomic nucleus)
 - o N. Bohr (planetary model)
 - o J. Dalton
 - o Democritus
- Vocabulary from All chapters
- Know the difference between Atomic #, Atomic Mass, Mass Number, Isotope +
 - o Know how these terms relate to each other

- Be able to describe the difference between Chemical Reactions and Nuclear Reactions
- Know the difference between the types of radiation (alpha, beta, gamma, positron) (α , β , γ)
- Be able to describe the different types of radioactive decay
- Be able to write nuclear equations involving α , β^+ , β^- , γ (decay) +
- Be able to describe the difference between Nuclear Fission and Nuclear Fusion
- Half-Life
 - o Meaning
 - o Equations +
 - Solve for Amt_F , Amt_I , time, half-life
 - Equation 1: $Amt_F = Amt_I \left(\frac{1}{2}\right)^{t/T}$
 - Equation 2: $\frac{\ln(Amt_f) - \ln(Amt_I)}{\ln(1/2)} = \frac{t}{T}$