

Describe what half-life is using a drawing and an example.

Write the reaction for the decay of magnesium-28.

Write the reaction for the decay of polonium-210.

Write the reaction for the decay of bismuth-208.

Write the symbols for a positron, a neutron, alpha and beta particles, and a gamma ray. Include mass numbers and atomic numbers.

Complete #51 on page 822 of your text.

Make a chart with the first four principal energy levels, the types of orbitals in each, the number of suborbitals, and the total number of electrons in each orbital and at each energy level.

Write both the long-hand configuration and the short-hand configuration for bromine. Indicate how many unpaired electrons there are. Also indicate how many valence electrons there are.

Complete practice problem #14 on page 140 of your text. Show all formulas, work and units.

Explain what an atomic spectrum is, and draw the spectrum for hydrogen.

Complete #13 on page 825 of your text.

Complete problem #76 on page 151 of your text. Show all formulas, work and units.

Describe the difference between nuclear fusion and nuclear fission. Provide a clearly labeled example of each.

Describe the four types of spontaneous decay: alpha decay, beta decay, positron emission, and electron capture. Provide a clearly labeled example of each.

Draw a wave representing the electromagnetic spectrum. Label it with the types of light (including visible) from lowest energy to highest. Label the long/short wavelengths, the high/low frequency, and the high/low energy.

Write the 3 rules to follow for placing electrons in the correct configurations (Hund, Pauli, Aufbau)

Draw an orbital diagram and the corresponding energy diagram; show one electron absorbing energy and one electron emitting energy in both diagrams. Label the ground state and the excited state.

Draw a longitudinal wave and a transverse wave. Label all their parts and give examples of each. Also indicate which way the wave and the medium move.

Write both the long-hand configuration and the short-hand configuration for phosphorus. Indicate how many unpaired electrons there are. Also indicate how many valence electrons there are.

Write out the correct order of orbitals for electron configurations; also draw the memory technique used to remember the correct order.

Explain what a standing wave is and what is required to make one.

Complete #70 on page 151 of your text.

Using diagrams, describe and compare constructive and destructive interference.

Write the half-life equation and use it to solve practice problem #7 on page 806 of your text. Show all work.

Write the speed of light equation with the variables, their units, and the value of the constant. Indicate the relationship between frequency and wavelength.

Write the energy equation with the variables, their units, and the value of Planck's constant. Indicate the relationship between frequency and energy of photons.