

Review Sheet for First Exam

Terminology

- selected elements: name and symbol
- common monatomic ions
- common polyatomic ions
- nomenclature for the periodic table
- roots and prefixes

Topics Covered

- types of bonding: covalent, ionic, and metallic
- representing and naming compounds
- wave and particle theory of light
- photoelectric effect and photoelectron spectroscopy
- Coulomb's law
- ionization energy
- models of the atom: Bohr model, shell model, quantum model
- quantum numbers
- electrons in atoms: core, valence, electron configurations, electron spin
- periodic properties: covalent radius, metallic radius, ionic radius, ionization energies, AVEE, electronegativity
- drawing and using Lewis structures; resonance structures; formal charges

Equations That Will be Provided to You

- $c = \lambda\nu$
- $E = h\nu$
- $KE = h\nu - BE$
- $\frac{1}{\lambda} = 1.09737 \times 10^{-2} \text{ nm}^{-1} \left(\frac{1}{n_1^2} - \frac{1}{n_2^2} \right)$
- $V = \frac{kq_1q_2}{d}$

Constants That Will be Provided to You

- $c = 2.998 \times 10^8 \text{ m/s}$
- $h = 6.626 \times 10^{-34} \text{ Js}$
- $N_A = 6.022 \times 10^{23} \text{ mol}^{-1}$