CONCEPT: THE ELECTRON CONFIGURATION: IONS

Electron Configurations (Cations)

- With a cation, we first remove electrons from the _____ shell number (*n* value).
  - The quantum number provides the shell number or energy level of the electron.

$$\underbrace{1s^2}_{n=} \quad \underbrace{2s^2 \quad 2p^6}_{n=} \quad \underbrace{3s^2 \quad 3p^6}_{n=}$$

EXAMPLE: Write the condensed electron configuration for the titanium (III) ion.

STEP 1: Provide the electron configuration for the neutral form of the element.

STEP 2: Begin removing electron(s) from the ____ numbered shell to obtain the desired charge.

- When in the same numbered shell (2s vs 2p) use Auf Bau Principle to remove the higher energy electron(s) first.

Electron Configurations (Anions)

- With an anion, add an electron(s) to the orbitals with available space.
  - **Note:** For an anion, the nonmetal keeps its base name but has its ending changed to _____.

EXAMPLE: Write the full electron configuration for the nitride ion.

STEP 1: Provide the electron configuration for the neutral form of the element.

STEP 2: Add electron(s) to the orbitals that can accommodate more electrons.

CONCEPT: THE ELECTRON CONFIGURATION: IONS

PRACTICE: What is the full electron configuration of the selenide ion?

PRACTICE: Determine the electron configuration for the Cl^+ ion.

PRACTICE: Determine the electron configuration and electron orbital diagram for the silver ion.