Quantum Theory and the Electronic Structure of Atoms

Chapter 7

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When copper is bombarded with high-energy electrons, X rays are emitted. Calculate the energy (in joules) associated with each photon if the wavelength of the X rays is 0.154 nm.

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How many 2p orbitals are there in an atom?

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How many electrons can be placed in the 3d subshell?

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Give the values of the quantum numbers associated with the orbitals in the 3p subshell.

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What is the total number of orbitals associated with the principle quantum number $n=4$?

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Using the periodic table to determine electron configuration

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1s
2s
2p
3s
3p
4s
3d
4p
4s
4d
5p
5s
5d
6p
6s
6d
7p
7s
8s
4f
5f

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Using the periodic table to determine electron configuration
Writing Electron Configurations with the Periodic Table

- Silicon
- Tellurium (Te)
- Lead (Pb)
- O^2-

What are the possible quantum numbers for the last (outermost) electron in Cl?