

Faculty Submitting: Allison Kelly

Specify here whether “Pre” or “End” of Unit and the Unit #: Pre Unit 6

<i>LOs: Describe the implications of wave mechanics and the quantization of electron energies and spin, including quantum numbers, atomic orbital energies, and the shapes of s, p and d orbitals</i> <i>Write full and condensed electron configurations, differentiate between core and valence electrons, draw orbital diagrams</i> <i>Explain the organization of the periodic table, group names, trends in metallic character, atomic radius, ionization energy, electron affinity, and electronegativity</i> <i>The Bohr Model and electromagnetic radiation</i>	
Unit 6_ Question 1	Canvas Question Type: Matching QUESTION GROUP
1a	Order the following in terms of <u>increasing wavelength</u>
	<ol style="list-style-type: none">1. Gamma2. X-Ray3. Ultraviolet4. Visible5. Infrared6. Microwave7. Radio
1b	Order the following in terms of <u>increasing frequency</u>
	<ol style="list-style-type: none">1. Radio2. Microwave3. Infrared4. Visible5. Ultraviolet6. X-Ray7. Gamma
Read More	https://openstax.org/books/chemistry-2e/pages/6-1-electromagnetic-energy
Unit 6_ Question 2	Canvas Question Type: Multiple Drop Downs
	For electromagnetic radiation, wavelength is [dropone] proportional to frequency and [droptwo] proportional to energy
	Dropone: inversely directly

	Droptwo: inversely directly
Read More	https://openstax.org/books/chemistry-2e/pages/6-1-electromagnetic-energy
Unit 6_ Question 3	Canvas Question Type: multiple drop down
	According to the Bohr model of the atom: Electrons move to an orbit with a higher n when a photon is [dropone] by an atom Electrons move to an orbit with a lower n when a photon is [droptwo] by an atom
	Dropone: absorbed emitted Drop two: emitted absorbed
Read More	https://openstax.org/books/chemistry-2e/pages/6-2-the-bohr-model
Unit 6_ Question 4	Canvas Question Type: Multiple Choice
	Which of the following is a <u>limitation</u> of the Bohr model of the atom?
	Correct Answer: It cannot explain the behavior of multi-electron atoms, such as Helium Wrong Answers: It assumes that electrons exist in quantized energy levels It cannot explain the discrete line spectra of elements It assumes that an electron's energy increases with increasing distance from the nucleus
Read More	https://openstax.org/books/chemistry-2e/pages/6-2-the-bohr-model
Unit 6_ Question 5	Canvas Question Type: Matching
	Match the quantum number to what it describes about an orbital Principle quantum number (n) – describes the location and energy level of a shell Angular momentum quantum number (l) – describes the shape of the orbitals in a subshell Magnetic quantum number (m _l) – describes the relative spatial orientation of an orbital
Read More	https://openstax.org/books/chemistry-2e/pages/6-3-development-of-quantum-theory
Unit 6_ Question 6	Canvas Question Type: Fill in Multiple Blanks

	<p>The Pauli exclusion principles: no two [electrons] in the same atom can have exactly the same set of all the four [quantum] numbers.</p> <p>This means that only [two] electrons can share the same orbital.</p>
Read More	https://openstax.org/books/chemistry-2e/pages/6-3-development-of-quantum-theory
Unit 6_ Question 7	Canvas Question Type: Multiple choice
	Which of the following accurately shows the subshells in increasing energy level within a shell?
	<p>Correct Answer: $s < p < d < f$</p> <p>Wrong Answers:</p> <p>$s < d < p < f$</p> <p>$f < d < p < s$</p> <p>$f < p < d < s$</p> <p>$s < f < d < p$</p> <p>$p < d < f < s$</p>
Read More	https://openstax.org/books/chemistry-2e/pages/6-4-electronic-structure-of-atoms-electron-configurations
Unit 6_ Question 8	Canvas Question Type: Matching
	<p>Match the following terms to their definitions</p> <p>valence electrons – electrons occupying the outermost shell orbital(s)</p> <p>core electrons – electrons occupying the inner shell orbital(s)</p>
Read More	https://openstax.org/books/chemistry-2e/pages/6-4-electronic-structure-of-atoms-electron-configurations
Unit 6_ Question 9	Canvas Question Type: True False
	<p>There are exceptions to the Aufbau principle when assigning electron configurations to elements</p> <p>TRUE</p>
Read More	https://openstax.org/books/chemistry-2e/pages/6-4-electronic-structure-of-atoms-electron-configurations
Unit 6_ Question 10	Canvas Question Type: Multiple Drop Down

	<p>Atomic radius generally [dropone] from left to right across a period and [droptwo] down a group. Cations have a [droptthree] radius than the atom from which it is derived. Anions have a [dropfour] radius than the atom from which it is derived.</p>
	<p>Dropone: decreases increases</p> <p>Droptwo: increases decreases</p> <p>Drop Three: smaller larger</p> <p>Drop Four: larger smaller</p>
Read More	https://openstax.org/books/chemistry-2e/pages/6-5-periodic-variations-in-element-properties