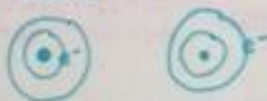


Name _____ Hour: _____

Chapter 6 Review

To study for this test look over your notes and practice problems from the unit.

- List green, yellow, blue, and red in order of increasing energy. *ROYGBIV*
red, yellow, green, blue INCRE.
- Sketch two atoms: One with an e⁻ in ground state and one with an e⁻ in an excited state. Hint: look at your notes
Ground



- Rank the following in order of increasing energy: 5s, 2s, 3p, 4s
2s, 3p, 4s, 5s

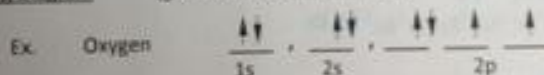
- Complete the following table:

Energy level	# of Sublevels	Sublevel names	# of orbitals	Max # of e
1	1	S	1	2
2	2	S, P	4	8
3	3	S, P, d	9	18

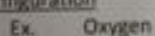
- Explain the following principles/ rules IN YOUR OWN WORDS.
 - Heisenberg Uncertainty Principle
 - Aufbau Principle
 - Pauli Exclusion Principle
 - Hund's Rule

Electron Arrangements-There are three ways to indicate the arrangement of electrons around an atom:

- Orbital Filling Diagram (gives the most information)



- Electron Configuration (quicker to draw than orbital filling diagrams)



- Noble gas Notation



- Write orbital diagrams, electron configurations, and Noble gas notation for the following elements.

Element	Orbital Diagrams	Electron Configuration	Noble Gas Notation
Calcium	<p>The upper energy levels and f orbitals are left out for simplicity. This simplified Aufbau chart will only hold 48 electrons.</p>	$1s^2 2s^2 2p^6 3s^2 3p^4 4s^2$	$[\text{Ar}] 4s^2$

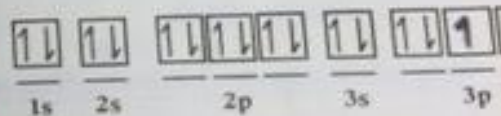
Chlorine	<p>The upper energy levels and f orbitals are left out for simplicity. This simplified Aufbau chart will only hold 48 electrons.</p>	$1s^2 2s^2 2p^6 3s^2 3p^5$ $[Ne] 3s^2 3p^5$
Rubidium	<p>The upper energy levels and f orbitals are left out for simplicity. This simplified Aufbau chart will only hold 48 electrons.</p>	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^1$ $[Kr] 5s^1$
Zinc	<p>The upper energy levels and f orbitals are left out for simplicity. This simplified Aufbau chart will only hold 48 electrons.</p>	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10}$ $[Ar] 4s^2 3d^{10}$
Silver	<p>The upper energy levels and f orbitals are left out for simplicity. This simplified Aufbau chart will only hold 48 electrons.</p>	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^9$ $[Kr] 5s^2 4d^9$

7. Identify the elements with the following configurations.

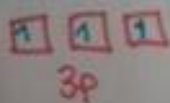
- $1s^2 2s^2 2p^6 3s^1$ Na
- $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$ K
- $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^1$ Nb
- $[Ar] 4s^1$ K
- $[Ne] 3s^2 3p^3$ P

8. A. Explain why the orbital diagram is incorrect.

electrons will occupy each orbital in a sublevel before doubling up



B. Re-draw the orbital diagram above so it is correct.



C. Which element is represented by the diagram? P