

## Ch 10 Homework Key

1. Classical=Wave or particle, wave continuous, macroscopic level

Quantum=Wave and particle, wave quantized, nanoscopic level

2.  $n$ = Describes distance from nucleus

$L$ = Describes shape of an orbital

$m_l$ = Describes orientation in space of orbitals, # of suborbitals in shell

$m_s$ = Describes the "spin" of an electron

3. A. Ca

B. O

C. Zn

D. Rb

4. Rows: Same principle QN ( $n$ -size)

5. Columns: Same set of valence  $e^-$ , similar physical & chemical properties

6.  $1s^2 2s^2, 2p^6, 3s^2, 3p^6, 4s^2, 3d^2$

7. 7 Valence  $e^-$

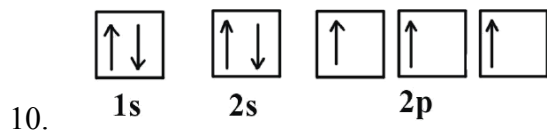
8. A. As the size of the molecule gets smaller across a row, the ionization energy grows

B. As you move down a column and the molecules get bigger, ionization energy gets smaller

9. A. Across a row, molecules decrease in size

B. Down a column, molecules increase in size

**Nitrogen**



**Aluminum**

