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## **Electron Orbitals Review Worksheet**

The last electron of each element is in what type of orbital (s,p,d,f)?

Cl

Ba

Ag

Np

Give the electron configuration of the elements or ions below.

Na

F

Se

$P^{3-}$

$Li^{+}$

Give the abbreviated electron configuration of the elements or ions below.

K

Te

La

$Ca^{2+}$

What happens when a photon of light strikes an electron?

What happens when an electron moves from a higher electron shell to a lower electron shell?

Draw the electron diagrams (on a separate piece of paper) of the elements or ions below.

Be

Si

Ca<sup>2+</sup>

S<sup>2-</sup>

Give the four quantum numbers (n, L, m<sub>L</sub>, m<sub>s</sub>) of the last electron of the elements below.

He

B

Zn

U

USE THE CONSTANTS (speed of light =  $c = 3.0 \times 10^8$  m/s and Plank's constant =  $h = 6.626 \times 10^{-34}$  m<sup>2</sup>kg/s) WHEN NEEDED IN THE EQUATIONS BELOW.

If the wavelength of a light wave is  $3.4 \times 10^{-7}$  m, what is the frequency?

If the frequency of a light wave is  $7.2 \times 10^9$  Hz, what is the wavelength?

If the energy of a light wave is  $9.1 \times 10^{-6}$  J, what is the frequency?

If the wavelength of a light wave is  $6.8 \times 10^{-12}$  m, what is the energy?

For each situation below state whether it is more likely to be toward the RED end of the spectrum or the BLUE end of the spectrum.

A long wavelength will be on the \_\_\_\_\_ end of the spectrum.

A low frequency will be on the \_\_\_\_\_ end of the spectrum.

A high energy wave will be on the \_\_\_\_\_ end of the spectrum.