

Answer the following questions on the answer sheet.

$$\Delta x \Delta p = h \quad \lambda p = h \quad h = 6.63 \times 10^{-34}$$

1) Place the following series of elements in the proper sequence for increasing electronegativity:

A) Ta Fr Al Ga Fe

B) Br F I Cl At

2) Place the following series of elements in the proper sequence for increasing ionization energy:

A) Be Mg Sr Ca Ba

B) S In Ge O Si

3) Place the following series of elements in the proper sequence for increasing atomic size:

A) Fe Al Fr Ta Ga

B) At Cl F Br I

4) Place the following series of elements in the proper sequence for increasing ionic size:

A)  $\text{Mg}^{2+}$   $\text{Rb}^+$   $\text{Be}^{2+}$   $\text{K}^+$   $\text{Cs}^+$

B)  $\text{F}^-$   $\text{S}^{2-}$   $\text{Te}^{2-}$   $\text{Se}^{2-}$   $\text{Cl}^-$

5) Why is the electron ionization energy of Hg greater than Tl ?

A) Hg completes the half-filled 2p which has extra stability.

B) Hg completes the half-filled 3p which has extra stability.

C) Hg completes the filled 3d which has extra stability.

D) Hg completes the filled 4d which has extra stability.

E) Hg completes the filled 5d which has extra stability.

F) Hg and Tl follow the general periodic trends.

6) What is the electron configuration for the following atoms according to the aufbau principle based on the hydrogen atom? (The core structure designation is OK to use.)

A) P

B) Cu