

Online Homework System

Assignment Worksheet

3/17/06 - 9:37 AM

Name: _____ **Class:** CHEM 120 Winter 2006
Class #: _____ **Section #:** _____
Instructor: Carey Bissonnette **Assignment:** C120-Assgt. 4

Question 1: (1 point)

What is the maximum kinetic energy of an ejected electron if silver metal is irradiated with 231-nm light? The threshold wavelength for a silver metal surface is 267 nm.

Give your answer accurate to **three significant figures**. Use exponential notation (e.g. 1.23e-19).

Question 2: (1 point)

If the electron in a hydrogen atom undergoes a transition from an $n = 5$ level to an $n = 2$ level, what is the wavelength of the radiation emitted? Give your answer accurate to **three significant figures**.

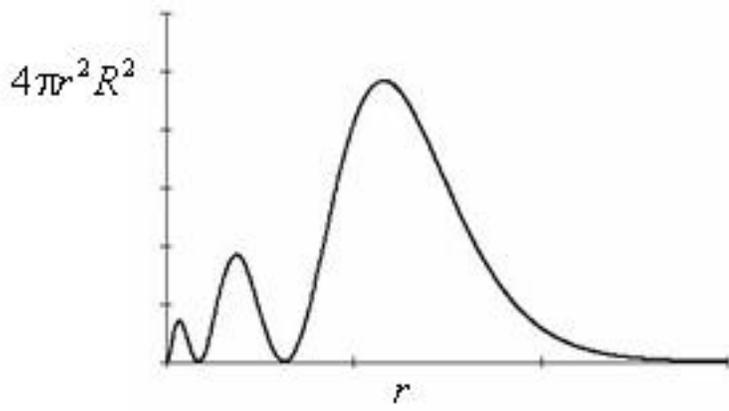
Question 3: (1 point)

Fill in the blanks:

The radial probability distribution for an orbital in the $n = 6$ shell is shown below.

What type of orbital is it?

The orbital is a _____ orbital. **(Enter 6s, 6p, 6d, or 6f.)**



Question 4: (1 point)

Fill in the blanks:

It takes _____ electrons to fill the 6f subshell of an atom.

It takes _____ electrons to fill the n=6 shell of an atom.

Question 5: (1 point)

Fill in the blanks:

For a **Ge** atom in its ground electronic state:

How many electrons are there in the 4s orbital? ____ (**Enter an integer.**)

How many electrons are there in the 3d orbitals? ____ (**Enter an integer.**)

How many electrons are there in the 4p orbitals? ____ (**Enter an integer.**)

How many unpaired electrons are there? _____ (**Enter an integer.**)

To what block of the periodic table does Ge belong? ____ (**Enter s, p, d or f.**)

Question 6: (1 point)

What is the ground-state electron configuration of the Cu^{2+} ion?

- (a) $[\text{Ar}] 4s^2 4d^7$
- (b) $[\text{Ar}] 4s^2 3d^7$
- (c) $[\text{Ar}] 4s^2 3d^9$
- (d) $[\text{Ar}] 4d^9$
- (e) $[\text{Ar}] 3d^9$

Question 7: (1 point)

Which of the following is/are paramagnetic in the ground electronic state?

- (a) V^{3+}
- (b) S
- (c) Zn^{2+}
- (d) Na^-
- (e) Fe
- (f) Ti

Question 8: (1 point)

Which of the following atoms is/are paramagnetic in the ground electronic state?

- (a) C
- (b) O
- (c) B
- (d) N
- (e) Be

Question 9: (1 point)

Which atom has the largest covalent radius?

- (a) O
- (b) P
- (c) As
- (d) Se
- (e) S