Some More Atom Questions

1. Two electrons in the same sublevel but in different orbitals could have up to how many quantum numbers in common?
3

2. What is the l quantum number for the last electron in the element As?
1

3. What are the possible values for l if n=3?
0,1,2

4. Given in a particular atom that l=2, what are the possible values for ml ?
-2 -1 0 1 2

5. What do we call the sublevel that is represented by l=3? How many orbitals does it have?

F 7

6. The last electron in a carbon atom is placed in what sublevel of what energy level? What are all of the quantum numbers that this electron can have?
2p n = 2 l = 1 m = 0 s = 1/2

7. Is iron paramagnetic or diamagnetic? Why?
Paramagnetic. Because it has unpaired valence electrons.

8. What element in period (row) 3 is the most magnetic? Why?

P 3 unpaired electrons

9. Helium has two electrons. What quantum numbers define each one? How many quantum numbers are the same?
N = 1 l = 0 m = 0 s = + ½ or – ½

10. The last electron for Mn is placed into what sublevel? What quantum numbers could define this electron?
N = 3 l = 2 m = 2 s = 1/2

11. An electron has a value of n=5. What are its m_s possibilities?

+ ½ or – 1/2

12. An electron has the following quantum numbers: n=4, l=1, m_l = -1, and m_s = +1/2. What energy level, sublevel, and orbital does it exist in? What is its spin?

4p on the x axis Ga (spinning clockwise)

13. What is the wavelength of an electron moving at 1/100 the speed of light?

14. How fast is a car moving if it has a mass of 1500 kg and a wavelength of 7.75×10^{-39} m? What is that in miles per hour?

15. What is the wavelength of an electron, which has a mass of 9.11 x 10 -19ng and travels at 2.00 x 108 m/s? 1.00 J = 1.00 N m and 1.00 N = 1.00 kg m/s2

16. An atom has an l value of 3. What does its n quantum number have to be?

4 or more

17. A valence electron in an atom of potassium has an m_s value of +1/2. What other 3 quantum numbers define this electron?

N = 4 L = 0 m = 0

Some Atom Questions!

1. How many electrons can be in an orbital?

2. How many electrons are in the outer shell of a F^- ion?

3. How many pairs of electrons are in an atom of iron?

4. How many dots are in the electron dot formula of Fe? of Sb?

5. How many dots are in the dot diagram of the noble gases?

6. How does the electron configuration of Ar compare to that of Cl- ?

7. What is the first element to have energy level "overlap"?

8. If l = 3, then m = ?

9. The energy of electrons in the same orbital is about the same? T of F

10. How many pairs of electrons are in the outer shell of Po?

11. What is the maximum number of quantum numbers any two electrons can have in common?

12. Two electrons in the same sublevel but in different orbitals would have how many quantum numbers in common?

13. How many neutrons are in U-235?

14. How many electrons are in a Cu^{+2} ion?

15. Are positive ions larger or smaller than their atoms?