

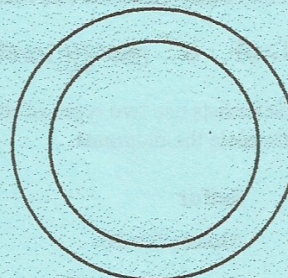
electron orbital WS

Atomic Basics

Name _____

Part A: Atomic Structure

1. Draw five protons in the nucleus of the atom. Label them with their charge.
2. Draw six neutrons in the nucleus of the atom.
3. Draw two electrons in the first energy level and label them with their charge.
4. Draw 2 electrons in the second energy level and label them with their charge.
5. What element is represented by the diagram? _____



Part B: Atomic Calculations

6. Label the information provided in the periodic table.

8	← _____
O	← _____
Oxygen	← _____
15.999	← _____

7. What does the atomic number represent?

_____ or _____

8. What does the atomic mass represent?

_____ + _____

9. How would you figure the number of protons or electrons in an atom?

10. How would you figure the number of neutrons in an atom?

11. Use your knowledge of atomic calculations to complete the chart.

Element	Atomic Number	Atomic Mass	Protons	Neutrons	Electrons
Li	3	7			
P	15	31			
Cl		35	17		
Ni	28			31	
K		39			19
Ag	47			61	
H		1	1		
Si				14	14
W			74	110	
Ne				10	10

Part C: Electron Configuration

12. How many electrons can each level hold? $s = 1$ $p =$ $d =$

13. List e^- energy levels/orbitals in order:

14. Scientists use two types of diagrams to show the electron configuration for atoms. Follow your teacher's directions to complete the diagrams.

Sulfur

Atomic # = 16

Atomic Mass = 32

Protons =

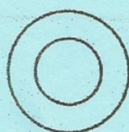
Neutrons =

Electron =

Bohr Diagram
Shows all electrons
orbitals

energy levels

15. Calculate the missing information and then draw orbitals or energy levels.



Li

Atomic # = 3

Mass # = 7

of P =

of N =

of E =

Ne

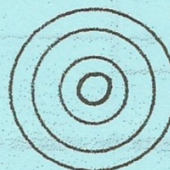
Atomic # = 10

Mass # = 20

of P =

of N =

of E =



Mg

Atomic # = 12

Mass # = 24

of P =

of N =

of E =

Cl

Atomic # = 17

Mass # = 35

of P =

of N =

of E =



He

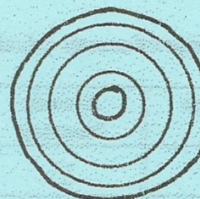
Atomic # = 2

Mass # = 4

of P =

of N =

of E =



Si

Atomic # = 14

Mass # = 28

of P =

of N =

of E =