

Name: _____

Date: _____

Unit 4: Atom and Periodic Table Review Sheet

Match the vocabulary term on the left with the definition on the right

A) Atom	1. _____ positively charged particle found in the nucleus
B) Neutron	2. _____ a region around the nucleus of an atom where an electron with a given energy is likely to be found
C) Nucleus	3. _____ very small, very dense, positively charged center of the atom
D) Proton	4. _____ # of protons (p^+) - determines atoms identity
E) Electron	5. _____ negatively charged particle found outside the nucleus
F) Atomic Number	6. _____ subatomic particle with a charge of zero and a mass of 1
G) Mass Number	7. _____ the smallest particle of an element that retains the chemical identity of that element
H) orbital	8. _____ # protons + # of neutrons

9. Draw Bohr Models of each of the following elements:

A. Be (Atomic Number 4)

B. Chlorine (Atomic Number 17)

10. Complete the following chart

Symbol	Atomic No.	Mass Number	# p^+	# e^-	# n
O					
Fe					
Al					
Cu					
Ru					

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11. Complete the following chart

Particle	Location	Charge	Mass (amu)
Proton			
Electron			
Neutron			

12. Draw the model of the atom proposed by each of the following: Democritus, Dalton, Thompson, Rutherford, Bohr, Wave Model.

13. Describe Rutherford's gold foil experiment, including the conclusions.

Match the scientist on the left to the description on the right:

A. Bohr	14. _____ Came up with the Atomic theory of matter which included the postulate that matter is composed of atoms
B. Dalton	15. _____ created atomic model based on probability
C. Democritus	16. _____ Discovered the nucleus
D. Rutherford	17. _____ Discovered the electron and determined that since there were negative subatomic particles, part of the atom must be positive.
E. Thomson	18. _____ coined the term atom and described atoms as hard solid particles made of the same material but of different shapes and sizes
F. Wave Model	19. _____ created atomic model of the atom based on energy levels

20. On the periodic table, how do each of the following properties changes as you go DOWN a **column** of the periodic table?

a. Atomic Number

b. Atomic Mass

c. Reactivity of metals

d. Reactivity of nonmetals

e. Atomic Radius

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21. On the periodic table, how do each of the following properties changes as you from LEFT to RIGHT on a **row** of the periodic table.

- a. Atomic Number
- b. Atomic Mass

- c. Reactivity of metals
- d. Reactivity of nonmetals
- e. Atomic Radius

22. Which of the following elements will be most reactive?

- a. Rb or Ba
- b. As or Br

23. Will S, N or F be most like O? Explain.

24. Tell where to find each of the following on the periodic table:

- a. metals
- b. Nonmetals
- c. semimetals

25. List characteristics of each of the following:

- A. metals
- B. Nonmetals
- C. Semimetals

Match the vocabulary term on the left with the definition on the right

A) Periodic Law	26. ____ Horizontal Row – the row number is the same as the principal quantum number
B) Atomic Radius	27. ____ distance from the center of the atom's nucleus to its outermost electrons
C) Groups or Families	28. ____ elements with similar properties are arranged in vertical columns . These elements have similar electron configurations
D) Valence Electrons	29. ____ When elements are arranged in order of increasing atomic number, their physical and chemical properties show a periodic trend
E) Periods	30. ____ occupy the highest principal energy level and are largely responsible for an atoms chemical properties

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Match the force to the description on the right.

- | | |
|--------------------|-----------------|
| A. Electromagnetic | C. Gravity |
| B. Weak force | D. Strong Force |

31. _____ "Glue" that holds the nucleus together by opposing the electromagnetic force. Works only when protons are close to each other
32. _____ Keeps electrons in orbit around the nucleus – acts as a force of attraction or repulsion.
33. _____ Force of attraction between all objects in nature
34. _____ Responsible for radioactive decay
35. How did Mendeleev and Mosely contribute to the development of the periodic table?
36. How many electrons are in the outer most shell of:
- A. Aluminum (At No. 13)
 - B. Phosphorus (At. No. 15)
37. Rb (At. No. 37)
38. List the metals Cu, Zn, Au, K, Ca and Fr in order of least reactive to most reactive:
39. List the non metals: P, S, Cl, O, and F in order of most reactive to least reactive.
40. Identify the element as metal, nonmetal or metalloid based on its location on the periodic table:
- A) Cl
 - B) Ag
 - C) Kr
 - D) Si
 - E) Sr
 - F) Cr
 - G) O