

CHM 090 Atoms Worksheet

Names _____

I. Fill in the table

atom	mass	# protons	# neutrons	# electrons
^{17}O				
^7Li				
^{25}Mg				

II. Chemical formulas:

- Symbolically express the number of atoms of each element in a compound.
- Number of atoms is indicated by a subscript following the element's symbol.

Example: water = H_2O has 2 H atoms, 1 O atom

sodium carbonate = Na_2CO_3 has ___ Na, ___ C, ___ O atoms

potassium phosphate = K_3PO_4 has ___ K, ___ P, ___ O atoms

calcium nitrate = $\text{Ca}(\text{NO}_3)_2$ has ___ Ca, ___ N, ___ O atoms

III. Questions

1. What subatomic particle is positively charged? _____
2. What subatomic particle is neutral? _____
3. What subatomic particle is negatively charged? _____
4. Which subatomic particle is NOT in the nucleus? _____
5. How many protons are in an oxygen (O) atom? _____
6. How many protons are in a chlorine (Cl) atom? _____
7. How many electrons are in a sodium (Na) atom? _____
8. How many electrons are in a helium (He) atom? _____
9. Write the atomic notation for phosphorus-32. (P) _____
10. How many neutrons are in an atom of phosphorus-32? _____

11. Write the atomic notation for nitrogen-15 (N) _____
12. How many neutrons are in an atom of nitrogen-15? _____
13. The atomic number is the number of neutrons. Circle True or False
14. The atomic mass is the sum of ALL the subatomic particles. Circle True or False
15. All carbon (C) atoms have 6 protons. Circle True or False
16. All hydrogen (H) atoms have 2 neutrons. Circle True or False
17. An electron weighs the same as a proton. Circle True or False
18. Which of the following is an isotope of chlorine-35?
- a. Chlorine-37
 - b. Sulfur-35
 - c. Fluorine-35
 - d. All of the above
 - e. None of the above
19. The mass of one atom must be a whole number. Circle True or False
20. The average mass of all atoms is a whole number. Circle True or False
21. Isotopes have
- a. Same number of protons, different number of electrons
 - b. Same number of neutrons, different number of protons
 - c. Same number of protons, different number of neutrons
 - d. Same number of electrons, different number of neutrons
 - e. Same number of neutrons, different number of electrons
22. You can have $\frac{1}{2}$ of a proton. Circle True or False
23. How many neutrons are in an atom of ^{238}U ? _____
24. How many electrons are in an atom of ^{238}U ? _____
25. Electrons are in the nucleus. Circle True or False
26. How many atoms total are in one molecule of HBrO_4 ? _____