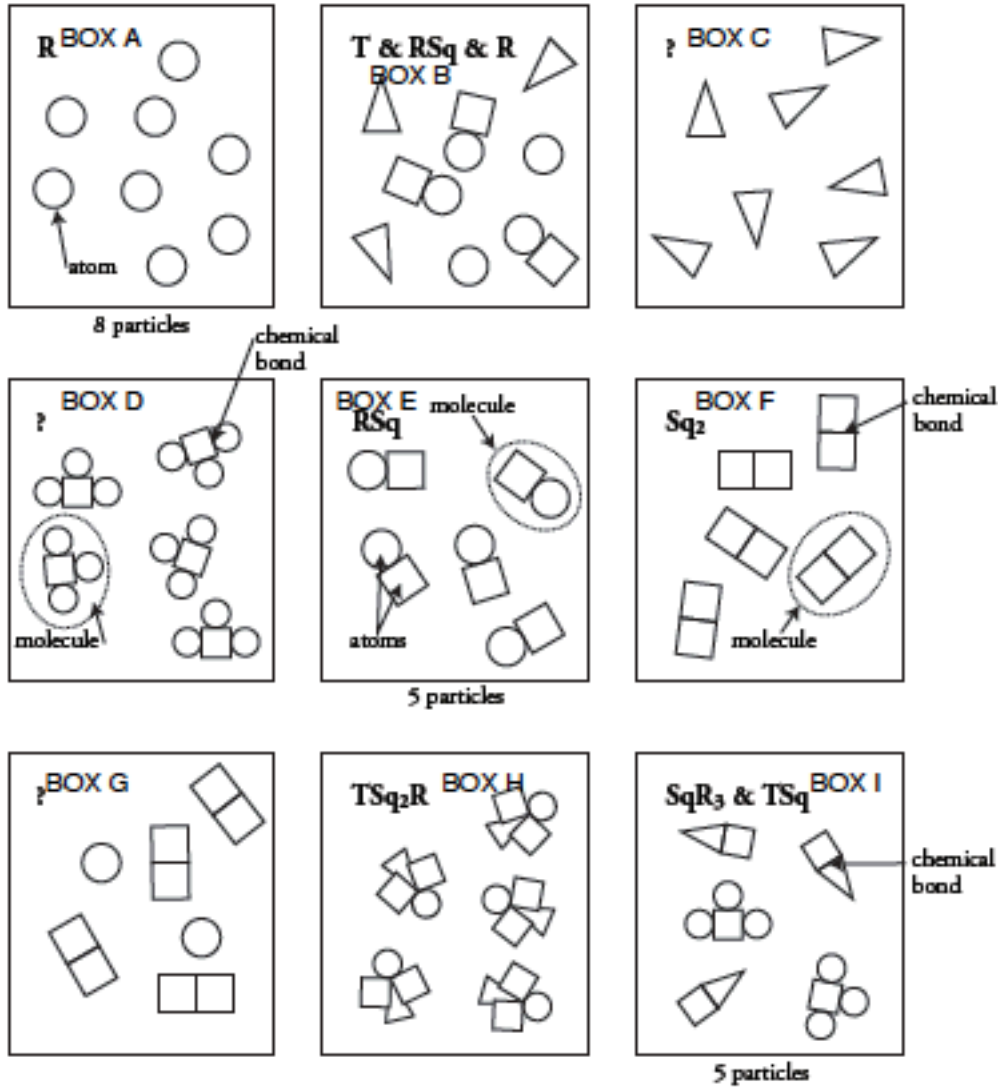


General Chemistry Practice Final Exam

MATTER SECTION

- _____ 1. Which is a substance?
- A) a salt water solution
 - B) the element iron
 - C) Either of these
- _____ 2. _____ is a substance in which all the **atoms** in it are alike.
- A) Na_2O
 - B) H_2
 - C) NaCl
- _____ 3. A(n) _____ is a substance in which all the exact combinations of elements are always the same.
- A) synthetic element
 - B) mixture
 - C) compound
 - D) solution
- _____ 4. The diatomic substance nitrogen has:
- A) two of the same atoms
 - B) two different kinds of atoms
 - C) only one atom
- _____ 5. Which is a solution?
- A) chlorine
 - B) fog
 - C) salt water
 - D) sand mixed with water
- _____ 6. If you can separate a sample of matter without doing a chemical reaction, the matter was:
- A) a compound
 - B) a mixture
 - C) a substance
 - D) an element

Model 1 — Atoms, Particles, and Molecules



Classification of Matter

1

Use the chart above to answer questions 7 - 12

Fill in the blank....Only one answer per blank. If there are multiple answers, JUST GIVE ONE ANSWER, EVEN IF THERE IS MORE THAN ONE CORRECT ANSWER.

_____ 7. Only elements

_____ 8. A heterogeneous mixture of elements and compounds

_____ 9. Only compounds

_____ 10. A mixture

_____ 11. Pure substance

_____ 12. Five molecules

ATOM SECTION

- ____13. The number of **nucleons (protons and neutrons)** in Carbon 14 is:
a. 6 b. 8 c. 14
- ____14. The number of **protons** in Carbon 14 is:
a. 6 b. 8 c. 14
- ____15. The number of **neutrons** in Carbon 14 is:
a. 6 b. 8 c. 14
- ____16. What is the smallest UNIQUE unit of an element? Remember that subatomic particles are not unique.
a. an atom b. an electron c. a proton d. a neutron
- ____17. What particle gives the nucleus a charge?
a. neutrons b. electrons c. protons d. protons and neutrons
- ____18. An isotope is an atom of a specific element with a varying number of _____, so the ____ varies
a. ions/ mass b. protons/charge c. electrons/charge d. neutrons/mass
- ____19. The electron cloud of an atom is... (NOTE: LOW DENSITY WOULD MEAN MOSTLY EMPTY)
a. negatively charged and has a low density b. positively charged and has a high density
c. positively charged and has a high density d. negatively charged and has a low density
- ____20. The mass of the atom is contained in a “pinpoint” center called the nucleus.
a. False b. True
- ____21. All atoms of the same element have the same:
a. atomic number b. mass number c. atomic masses
- _____22. Which of the subatomic particles are not found in the nucleus?
- _____23. The mass of the atom is in the nucleus. Which subatomic particles determine mass?
- _____24. What subatomic particles do you expect to find in energy levels outside of the nucleus?
- _____25. What subatomic particles are found in the center of the atom?
- _____26. Which subatomic particles are most involved in bonding with other atoms?
hint: would these be on the outside, or the inside of atom?

27 - 36. Complete the following chart.. Remember....there is no charge, so electrons and protons are equal.

Element Symbol	Atomic Number	Mass Number	# p ⁺	#e ⁻	#n ⁰	Hyphen Notation
						Lithium -7
Mg				12	13	

37 - 41 Put the arrows in the boxes to represent the electrons, and complete the table.

Arsenic

5p 4d

5s

4p 3d

4s

3p Noble Gas Configuration:

3s

2p Outer Electron Configuration:

2s

1s Full Electron Configuration:

Complete the following chart. READ THE HINTS BELOW THE CHART FIRST!!

42 - 49

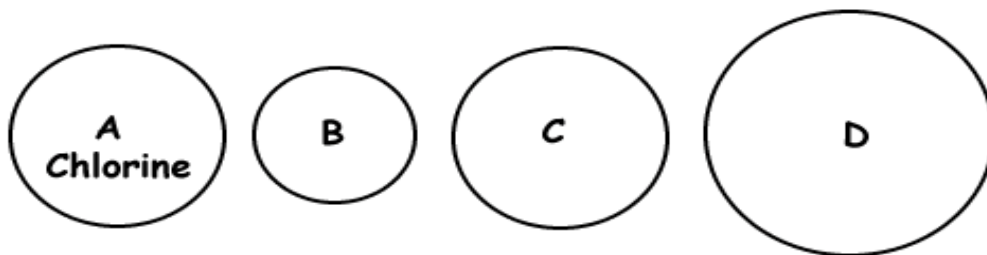
Element Symbol	Atomic Number	Mass Number	# p ⁺	#e ⁻	#n ⁰	Hyphen Notation	Charge
N	7					nitrogen-15	-3
			14		15	silicon-29	+4

Atomic number = number of protons. ALWAYS. If the atom is neutral (no charge) the electrons are equal to the protons. If there is a positive charge, the atom has lost electrons, so the charge becomes positive. If there is a negative charge, the atom has gained electrons, so the charge is negative.

Protons + Neutrons = Mass number

Periodic Table Section:

Use the circles below as choices for questions 50 - 56



_____ 50. Which could be an atom of fluorine?

_____ 51. Which could be an atom of bromine?

_____ 52. Which would have the highest ionization energy?

_____ 53. Which might be a chloride ion (Cl⁻)?

_____ 54. Which would be farthest right in a series on the periodic table?

_____ 55. Which would be the closest to the bottom of a family on the periodic table?

_____ 56. Which would be most likely to lose an electron?

_____ 57. Where are the largest atoms found on the periodic table?

a. upper right

b. lower right

c. lower left

d. upper left

_____58. Which of the following is the largest atom?

- a. Li b. B c. C d. Ne

_____59. Which of the following is the smallest atom?

- a. Li b. Na c. K d. Cs

_____60. Which of the above would be the most reactive?

_____61. What is the most active nonmetal?

- a. S b. C d. F e. I

WRITING FORMULAS

Write correct formulas for the following:

Write CORRECT formulas for the following compounds.

62. copper(II) sulfide _____

63. potassium phosphide _____

64. chromium(II) phosphide _____

65. Barium oxide _____

66. nickel (III) iodide _____

67. tin (IV) nitride _____

68. Iron(II) HYDROXIDE _____

**(use the list on the bottom
of your periodic table)**

69. lithium sulfide _____

70. Potassium phosphATE _____

71. copper(II) acetATE _____

Complete and balance the following equations:

72. Zinc + Aluminum chloride yields zinc chloride + Aluminum

73. Aluminum nitrate + sodium hydroxide yields sodium nitrate + aluminum hydroxide

74. Aluminum + iodine yields aluminum iodide

75. Calcium nitrate + sodium phosphate yields sodium nitrate + calcium phosphate