

## The Periodic Table W.S. 22

Use the information given previously (notes 20), information in the periodic table, and other sources if necessary, to answer the following questions.

1) Give Robert Boyle's definition of an element.

2)a) What is a group?

b) What do all elements of a group have in common?

3) Give four properties of metals.

4) State whether each the following is a metal (m), a nonmetal (n), or a semiconductor (s).

a) antimony

b) strontium

c) sulfur

5) Name the element.

a) It's a liquid nonmetal (at room temperature  $293\text{ K} = 20^\circ\text{C}$ ).

b) It's a Noble gas (atomic weight = 40 A.M.U.).

c) Argentina was named after this metal.

d) It's a diatomic gas with the lowest atomic mass.

e) It has the symbol Rb.

f) It has 28 protons in its nucleus.

g) It has a density of  $19.3\text{ g/cm}^3$ .

h) This metal has the highest melting point.

i) Its gas has molecules which are tetra-atomic.

6) Define: combining capacity (oxidation state)

7) Give the combining capacity for each of the following.

a) Al                      b) F

8) State which is more metallic.

a) Pd or Sn              b) Rb or Fr

9) Why is hydrogen special?

Answers: 1) They are substances which cannot be broken down into simpler substances., 2)a) It is a column in the periodic table., b) They have similar properties., 3) good conductor(for heat and electricity), shiny, ductile, malleable, 4)a) s, b) m, c) n, 5)a) bromine, b) argon, c) silver (argentum Ag), d) hydrogen, e) rubidium, f) nickel, g) gold, h) tungsten, i) phosphorus, 6) It is the number of electrons an atom loses or gains in a chemical reaction., 7)a) +3, b) -1, 8)a) Pd, b) Fr, 9) Hydrogen can act like a metal or a nonmetal.