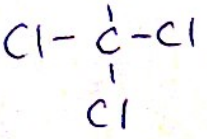
Reference Tables Scavenger Hunt Name KEY

Directions: Using the Reference Tables for Chemistry, locate the following information.

1. What is the atomic number of iron? 26
2. What is the electronegativity (EN) difference of HF? 1.8
3. How many valence electrons does Phosphorous have? 5
4. What does STP stand for, and give the values? Standard Temperature & Pressure 1 atm
5. What table are Polyatomic Ions found in? Table E
6. Name the polyatomic ion, OH^-. Hydroxide
7. What is the symbol for the polyatomic ion, ammonium? NH_4^+
8. What is the freezing point of fluorine? 53 K
9. What are the units for the heat of fusion, and what do they mean? J/g = amount of heat required to melt 1 gram of a substance
10. What is the symbol for the mole? mol
11. What is the vapor pressure of water at 75°C? ~ 38 kPa (Table H)
12. What is the formula for the permanganate ion? MnO_4
13. What is the atomic mass of silver? @ 107.868 amu
14. What is the ionization energy of Rb? 403 kJ/mol
15. What is the atomic radius of Bromine? 117 pm
16. Write the electron configuration of potassium. 2-8-8-1
17. What is the trend of atomic radii across period 3? Decreases
18. Will Mn produce colored ions in solution? Why or why not? It's a transition metal.
19. Will Ca gain or lose electrons when it becomes an ion, Ca^{2+}? lose electrons
20. What is the heat of vaporization of water? 2260 J/g
21. What is the density of tin? 7.287 g/cm^3
22. a. In the molecule CCl_4, what is the EN (Electronegativity) difference of the C-Cl bond? 0.6
    b. Is the bond polar or nonpolar? Why? polar, C-Cl is asymmetrical
    c. Is the molecule polar or nonpolar? Why? nonpolar, molecules is symmetrical



Using table T, solve the following problems:

23. If the accepted value for the mass of an object is 10.3g and a student found that the mass was 10.1g, what is the student's percent error?

$$\%\ \text{Error} = \frac{\text{measured} - \text{accepted}}{\text{accepted}} \times 100 = \frac{10.1 - 10.3}{10.3} \times 100 = \boxed{-1.94\ \%}$$

24. If a peanut is burned in a calorimeter containing 50g of water, and the water temperature changes from 45^0C to 57^0C, how many joules of energy were released by the peanut?

$$q = mc\Delta T$$
$$= (50\,g)(4.18\ J/g \cdot K)(57 - 45)$$
$$= \boxed{2508\ J}$$

25. How much heat does it take to convert 20g of water to steam at 100^0C?

liquid → gas

$$q = m\,\Delta H_{vap}$$
$$= (20\,g)(2260\ J/g)$$
$$= \boxed{45200\ J}$$