**Quiz 2**

# Directions: Answer each of the following questions. Be sure to use complete sentences where appropriate. For full credit be sure to show all of your work. Where appropriate answers should be boxed for clarity, written to the correct number of significant figures, and, include the proper units.

1. Classify each of the following as a physical or chemical property of matter (3 points):
	1. The boiling point of isopropyl alcohol. \_\_\_\_physical
	2. Salt dissolving in water. \_\_\_\_physical
	3. The tendency of iron to rust. \_\_\_\_chemical
2. The temperature of the lab room is measured to be 19.1 °C (6 points).
	1. What is the temperature in Fahrenheit?

$$T\_{F}=\left(\frac{9 ℉}{5 ℃}\right)T\_{C}+32 ℉ $$

$$T\_{F}=\left(\frac{9 ℉}{5 ℃}\right)(19.1 ℃)+32 ℉ $$

$$T\_{F}=34.38 ℉+32 ℉=66.38 ℉≈66.4 ℉ $$

* 1. What is the temperature in Kelvin?

$$T\_{K}=\left(\frac{1 K}{1 ℃}\right)T\_{C}+273.15 K $$

$$T\_{K}=\left(\frac{1 K}{1 ℃}\right)(19.1 ℃)+273.15 K $$

$$T\_{K}=19.1 K+273.15 K=292.25 K≈292.3 K$$

1. Fill in the missing information in the following table (8 points):

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Symbol | $$$$ | $$^{-}$$ | $$$$ | $$$$ |
| Number of Protons | 21 | 127-74=53 | 82 | 92 |
| Number of Neutrons | 45-21=24 | 74 | 125 | 238-92=146 |
| Number of Electrons | 21-3=18 | 54 | 82 | 92 |
| Mass Number  | 45 | 127 | 125+82=207 | 238 |

1. Identify the type of reaction as redox, double displacement, decomposition or acid-base (3 points):
	1. Cu(NO3)2 (aq) + K2S (aq) → CuS (s) + 2 KNO3 (aq) \_\_\_double displacement
	2. Zn (s) + 2 HCl (aq) → H2 (g) + ZnCl2 (aq) \_\_\_redox
	3. CaCO3 (s) $→$ CaO (s) + CO2 (g) \_\_\_decomposition