# **Decay Practice Worksheet #1**

### **Types of Decay Reactions**

State whether each of the following decay reactions is alpha, beta, or gamma decay.

1. 
$$^{232}_{92}U \rightarrow ^{4}_{2}He + ^{228}_{90}Th$$
 2.  $^{130}_{52}Te \rightarrow ^{0}_{-1}e + ^{130}_{53}I$  3.  $^{3}_{1}H \rightarrow ^{0}_{-1}e + ^{3}_{2}He$ 

2. 
$$^{130}_{52}\text{Te} \rightarrow ^{0}_{-1}\text{e} + ^{130}_{53}\text{I}$$

3. 
$${}_{1}^{3}H \rightarrow {}_{-1}^{0}e + {}_{2}^{3}He$$

#### **Balancing Decay Reactions**

Fill in the blank in each of the following decay reactions with the correct decay particle or decayed nucleus that will balance the decay reaction, and also state whether it is alpha or beta decay.

4. 
$${}^{184}_{74}W \rightarrow {}^{4}_{2}He + _____$$

7. 
$${}^{14}_{6}C \rightarrow {}^{0}_{-1}e + \underline{\hspace{1cm}}$$

5. 
$$^{210}_{82}\text{Pb} \rightarrow \underline{\hspace{1cm}} + ^{206}_{80}\text{Hg}$$

8. 
$${}^{35}_{16}S \rightarrow \underline{\hspace{1cm}} + {}^{35}_{17}CI$$

6. \_\_\_\_\_
$$\rightarrow_2^4 \text{He} + {}^{207}_{81} \text{TI}$$

9. 
$$\longrightarrow_{-1}^{0} e +_{28}^{60} Ni$$

#### **Writing Balanced Decay Reactions**

Write the balanced decay reaction formula when each of the following radioactive isotopes decays in the manner stated.

**10.** 
$$^{45}_{20}$$
Ca (beta)

**12.** 
$$^{210}_{84}$$
Po (alpha)

## **Predicting Decay Products**

- 14. What is the name of the product isotope formed when Radon-222 decays by alpha decay?
- 15. What is the name of the product isotope formed when Thorium-234 decays by beta decay?