Name: Key

Simple Nuclear Equations and Isotope Practice

Complete the following equations

1. $^{212}_{84}Po \rightarrow {}^{4}_{2}He + {}^{208}_{82}Pb$

2. $^{28}_{13}Al \rightarrow {}^{28}_{14}Si + {}^{0}_{-1}e^-$

3. $^{238}_{92}U \rightarrow {}^{234}_{90}Th + {}^{4}_{2}\alpha$

4. $^{210}_{83}Bi \rightarrow {}^{4}_{2}He + {}^{206}_{81}Tl$

5. $^{35}_{16}S \rightarrow {}^{35}_{17}Cl + {}^{0}_{-1}\beta$

6. $^{209}_{84}Po \rightarrow {}^{209}_{84}Po + \gamma$

7. Write the nuclear equations for the decay of Po-210 if it undergoes 2 consecutive alpha decays followed by a beta decay followed by another alpha decay.

$^{210}_{84}Po \rightarrow {}^{4}_{2}\alpha + {}^{206}_{82}Pb$

$^{206}_{82}Pb \rightarrow {}^{4}_{2}\alpha + {}^{202}_{80}Hg$

$^{202}_{80}Hg \rightarrow {}^{0}_{-1}\beta + {}^{202}_{81}Tl$

$^{202}_{81}Tl \rightarrow {}^{4}_{2}\alpha + {}^{198}_{79}Au$

8. Titanium has five common isotopes: ^{46}Ti (8.0%), ^{47}Ti (7.8%), ^{48}Ti (73.4%), ^{49}Ti (5.5%), and ^{50}Ti (5.3%).

   a. What is the average atomic mass of Ti? Show your work.

   46 (0.08) =
   47 (0.078) =
   48 (0.734) =
   49 (0.055) =
   50 (0.053) =

   47.92 amu

   48 amu

   b. Which isotope of Ti is most abundant? ^{48}Ti

   c. Which isotope of Ti is least abundant? ^{50}Ti