College Prep Chemistry of the Earth System

Assignment 3N

20 Points

Beta (β -) and Beta (β +) Decay Processes *Answer the following questions*

1. What is the difference between the roles of β - and β + decay processes?

Solve the following nuclear decay equations

2.
$$^{223}_{87}$$
Fr $\rightarrow ^{0}_{-1}$ e⁻ + _____

3.
$$^{165}_{61}$$
Pm $\rightarrow ^{0}_{-1}e^{-}$ + _____

4.
$$^{26}_{13}\text{Al} \rightarrow + ^{0}_{-1}\text{e}^{-} + \underline{\hspace{1cm}}$$

5.
$$\rightarrow {}^{0}_{-1}e^{-} + {}^{59}_{29}Cu$$

6.
$$\rightarrow 0_{-1}e^{-} + 198_{86}Rn$$

7.
$$^{22}_{11}$$
Na $\rightarrow + ^{0}_{+1}e^{+} +$ ______

8.
$${}^{15}_{8}O \rightarrow + {}^{0}_{+1}e^{+} + \underline{\hspace{1cm}}$$

9.
$$\rightarrow + {}^{0}_{+1}e^{+} + {}^{18}_{8}O$$

10. _____
$$\rightarrow$$
 + $^{0}_{+1}e^{+}$ + $^{40}_{18}Ar$