Task #81483

Complete the following equations:

- a)30^P+.....->300^Si
- b)10^B+n->....+α
- c)20^Ne+136^Ba->150^Dy+....
- d).....+2 H ->22 N a+ α

Solution.

These reactions are devoted to alpha and beta radiation. An alpha particle is a helium atom with an atomic mass of 4 and charge 2. A beta particle is an electron with an atomic mass approximately equal to unity and a charge of -1. In addition, you most likely have an error in a). Since silicon isotopes do not have an atomic mass of 300. It can only be in the vicinity of 30.

a)
$$^{30}_{15}$$
P+ $^{0}_{-1}$ e-> $^{30}_{14}$ Si

b)
$${}^{10}{}_{5}B + {}^{1}{}_{0}n - > {}^{7}{}_{3}Li + {}^{4}{}_{2}He$$

c)
$$^{20}_{10}$$
Ne+ $^{136}_{56}$ Ba-> $^{150}_{66}$ Dy+6 $^{1}_{0}$ n

d)
$$^{24}_{12}Mg+^{2}_{1}H->^{22}_{11}Na+^{4}_{2}He$$

Answer:

a)
$$^{30}_{15}P + ^{0}_{-1}e - > ^{30}_{14}Si$$

b)
$${}^{10}{}_{5}B + {}^{1}{}_{0}n - > {}^{7}{}_{3}Li + {}^{4}{}_{2}He$$

c)
$$^{20}_{10}$$
Ne+ $^{136}_{56}$ Ba-> $^{150}_{66}$ Dy+6 $^{1}_{0}$ n

d)
$$^{24}_{12}Mg + ^{2}_{1}H - > ^{22}_{11}Na + ^{4}_{2}He$$

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