Answers to review questions page 670

33.
$$^{235}_{92}\text{U} \rightarrow ^{231}_{90}\text{Th} + ^{4}_{2}\text{He}$$
 $^{231}_{90}\text{Th} \rightarrow ^{231}_{91}\text{Pa} + ^{0}_{-1}e$
 $^{231}_{91}\text{Pa} \rightarrow ^{227}_{89}\text{Ac} + ^{4}_{2}\text{He}$
 $^{227}_{89}\text{Ac} \rightarrow ^{227}_{90}\text{Th} + ^{0}_{-1}e$
 $^{227}_{89}\text{Th} \rightarrow ^{223}_{88}\text{Ra} + ^{4}_{2}\text{He}$
 $^{223}_{88}\text{Ra} \rightarrow ^{219}_{86}\text{Rn} + ^{4}_{2}\text{He}$
 $^{219}_{86}\text{Rn} \rightarrow ^{215}_{84}\text{Po} + ^{4}_{2}\text{He}$
 $^{215}_{84}\text{Po} \rightarrow ^{211}_{82}\text{Pb} + ^{4}_{2}\text{He}$
 $^{211}_{83}\text{Bi} \rightarrow ^{211}_{83}\text{Bi} + ^{0}_{-1}e$
 $^{211}_{83}\text{Bi} \rightarrow ^{211}_{84}\text{Po} + ^{0}_{-1}e$
 $^{211}_{84}\text{Po} \rightarrow ^{207}_{82}\text{Pb} + ^{4}_{2}\text{He}$
34. a. $^{239}_{94}\text{Pu}$
b. $^{13}_{6}\text{C}$
c. $^{1}_{0}n$
d. $^{139}_{56}\text{Ba}$
35. a. $^{1}_{1}\text{H}$
b. $^{12}_{6}\text{C}$
c. $^{0}_{-1}e$
36. $^{117}_{54}\text{Xe} \rightarrow ^{117}_{53}\text{I} + ^{0}_{+1}e$