2024 Ph H1 Q12

Section: Particles and Waves

Topic: Nuclear Reactions

Question Summary

$^{239}_{92}U$ undergoes β^- decay, then again β^- to form nucleus X.

Worked Solution

First β^-: $^{239}_{92}U \rightarrow {}^{239}_{93}Np$.

Second β^-: $^{239}_{93}Np \rightarrow {}^{239}_{94}Pu$.

Final Answer

E — $^{239}_{94}Pu$

Revision Tips

• In β^- decay: A constant, Z + 1.

• Apply decay steps in sequence.

• Check A and Z with periodic table.