2018 Ph H1 Q11

Section: Particles and Waves

Topic: Nuclear Reactions

Question Summary

Fission: $^{1}_{0}n + {}^{235}_{92}U \rightarrow {}^{141}_{56}Ba + X + 3 \times {}^{1}_{0}n$. Identify X.

Worked Solution

Total mass number before = 235 + 1 = 236.

After: (141 + 3) + X = 236 → X has A = 92.

Charge: 92 − 56 = 36 → X = krypton.

Final Answer

B — $^{92}_{36}Kr$

Revision Tips

- Conserve total A and total Z across the reaction.
- Neutrons change A only, not Z.
- Check element identity from atomic number.