2017 Ph H1 Q8

Section: Particles and Waves

Topic: Nuclear Reactions

Question Summary

Lawrencium-256 undergoes alpha decay: $^{256}_{103}Lr \rightarrow Z + {}^{4}_{2}He$. Identify the nuclide Z from the options.

Worked Solution

Alpha decay reduces A by 4 and Z by 2.

So 256 → 252 and 103 → 101 (mendelevium).

Final Answer

A — $^{252}_{101}Md$

Revision Tips

- In alpha decay: A decreases by 4; Z decreases by 2.
- Check conservation of both A and Z.
- Use the periodic table to match atomic number to element.