

**30** Nuclei of atoms can exist in excited states.

The mass of a nucleus in its ground state is  $59.9308\ u$ .

When this nucleus returns from an excited state to the ground state, a gamma ray photon of energy  $2.13 \times 10^{-13}\ \text{J}$  is emitted.

What is the mass of a nucleus in the excited state?

- A**  $59.9280\ u$
- B**  $59.9294\ u$
- C**  $59.9322\ u$
- D**  $59.9337\ u$

END OF PAPER