

- 29** When an isotope of boron, $^{10}_5\text{B}$ captures a slow neutron, it splits into lithium ^7_3Li and an alpha particle. An emission of γ -ray occurs during this reaction.

The nuclear binding energies of the reactants and products are

$$\begin{aligned} ^{10}_5\text{B} &: 64.94 \text{ MeV} \\ ^7_3\text{Li} &: 39.25 \text{ MeV} \\ ^4_2\text{He} &: 28.48 \text{ MeV} \end{aligned}$$

If the total kinetic energies of the products produced is 2.31 MeV, what is the energy of the γ -ray emitted?

- A** 0.48 MeV
- B** 2.79 MeV
- C** 10.77 MeV
- D** 25.69 MeV