

29 In this question, use the following values for the masses of the proton, the neutron and the electron.

$$\text{proton mass } m_p = 1.00728 \text{ u}$$

$$\text{neutron mass } m_n = 1.00867 \text{ u}$$

$$\text{electron mass } m_e = 0.00055 \text{ u}$$

The particles making up a zirconium atom of nucleon number 90 and proton number 40 are completely separated to infinity.

What is the total mass of the separated particles?

A 90.0000 u

B 90.7247 u

C 90.7328 u

D 90.7467 u

29 Today, the activity of a sample of caesium-137 is $4.0 \times 10^5 \text{ Bq}$. The half-life of caesium-137 is 32