39 When a sample of a radioactive isotope decays by α-particle emission, the α-particles emitted have a single discrete energy.

When a sample of a radioactive isotope decays by β^- particle emission, the β^- particles emitted have a continuous range of energies.

What is the explanation for this?

A An antineutrino is emitted with a β^- particle but not with an α-particle.

B An antineutrino is emitted with an α-particle but not with a β^- particle.

C The α-particles have much more energy than the β^- particles.

D The β^- particles have much more energy than the α-particles.