

29 A radioactive source consists of a mixture of two isotopes P and Q.

P has a half-life of 60 minutes and Q has a half-life of 30 minutes. The initial count rate recorded by a suitable counter is 800 min^{-1} . After 120 minutes the counter registers a count rate of 80 min^{-1} .

What was the initial count rate of P?

A 160 min^{-1}

B 240 min^{-1}

C 480 min^{-1}

D 640 min^{-1}

30 Uranium-238 decays by a series of alpha, beta and gamma decays into a final stable nuclide.