

OCR B Physics A Level

5.1.1 - Radioactive Decay

Flashcards



What is the activity of a radioactive source?



What is the activity of a radioactive source?

The number of atoms that decay per second.



What is half-life?



What is half-life?

Half-life is the time it takes for the activity/number of undecayed nuclei in a sample of a radioactive isotope to halve.



What is meant by the random nature of radioactive decay?



What is meant by the random nature of radioactive decay?

Which nuclei and when it will decay is determined by chance - it is unpredictable.



What sort of curve does a radioactive decay plot produce?



What sort of curve does a radioactive decay plot produce?

An exponential decay curve.



What is the decay constant?



What is the decay constant?

The decay constant is the fixed probability of a nucleus decaying in a second.



What is the unit of a decay constant?



What is the unit of a decay constant?

$$\text{s}^{-1}$$



State the equation used to calculate the activity of 'N' nuclei.



State the equation used to calculate the activity of 'N' nuclei.

$$A = \lambda N$$

Where λ is the decay constant

