

5 Radioactivity – Part 2 —Answers

Answers

Work through these after trying the questions yourself.

5.1 Alpha (α), beta (β) and gamma (γ).

5.2 Alpha.

5.3 Gamma.

5.4 The time taken for half the unstable nuclei in a sample to decay.

5.5 6 hours is two half-lives: $800 \rightarrow 400 \rightarrow 200$, so 200 counts/min.

5.6 Any two of: spend less time near the source; stay further away; use shielding (e.g. lead).

5.7 Each half-life halves the rate: $1600 \rightarrow 800 \rightarrow 400 \rightarrow 200$ is three half-lives, so $3 \times 2 = 6$ hours.