

- 8 Thoron is a radioactive gas. The variation with time t of the detected count rate C from a sample of the gas is shown in Fig. 8.1.

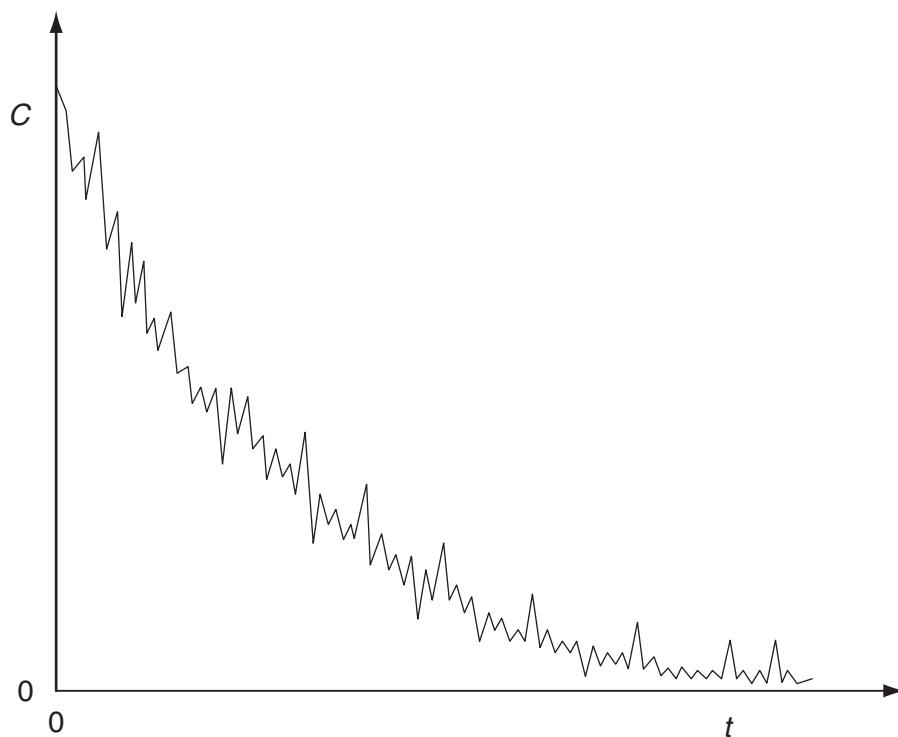


Fig. 8.1

Radioactive decay is said to be a random and spontaneous process.

- (a) Explain, by reference to radioactive decay, what is meant by a *random* process.

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- (b) State the feature of Fig. 8.1 which indicates that the process is

- (i) a decay process,

..... [1]

- (ii) random.

..... [1]

- (c) A second similar sample of thoron is prepared but it is at a much higher temperature. The variation with time of the count rate for this second sample is determined. State the feature of the decay curves for the two samples that suggests that radioactive decay is a spontaneous process.

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