

**Marks**  
**5**

- The radioactive isotopes  $^{131}\text{I}$  and  $^{137}\text{Cs}$  have been detected in drinking water near the Japanese Fukushima nuclear reactor. They have half lives of 8 days and 30 years, respectively. What is the definition of half-life?

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What percentage of both isotopes will still be detectable after 25 years?

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 $^{131}\text{I}$ : $^{137}\text{Cs}$ :

If you were exposed to equal concentrations of both isotopes for 1 hour, which isotope would do more damage? Explain.

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